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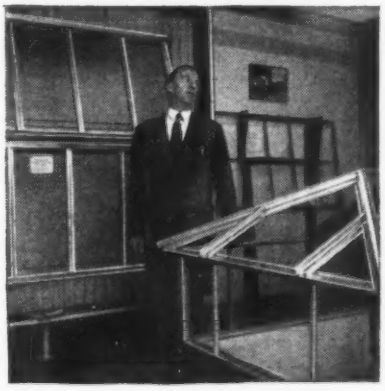
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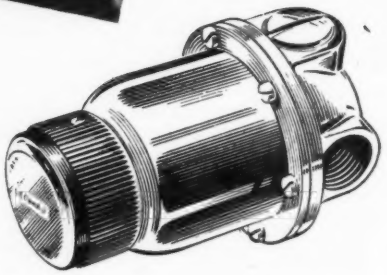
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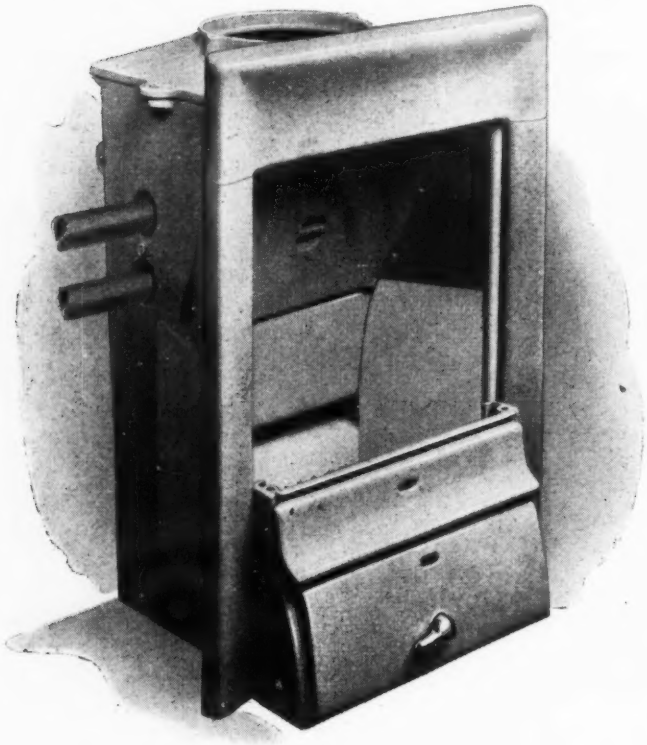
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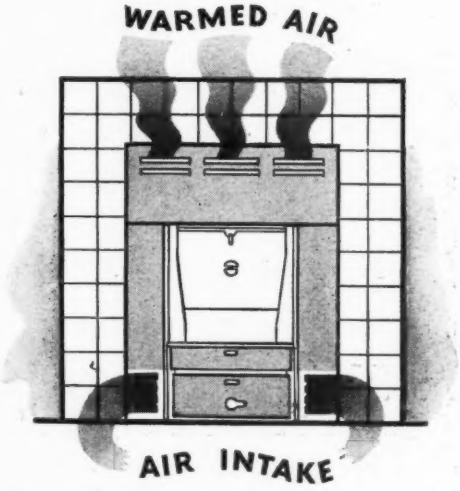
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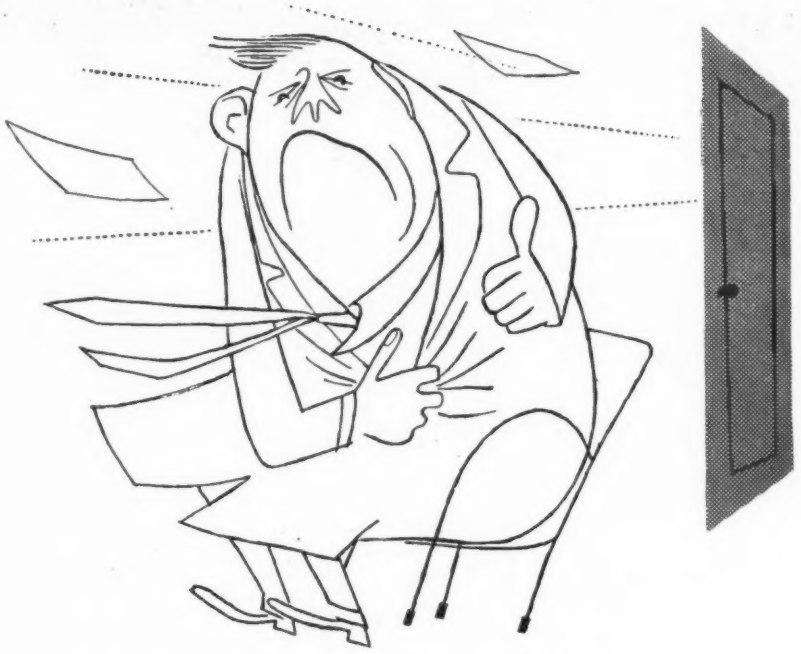
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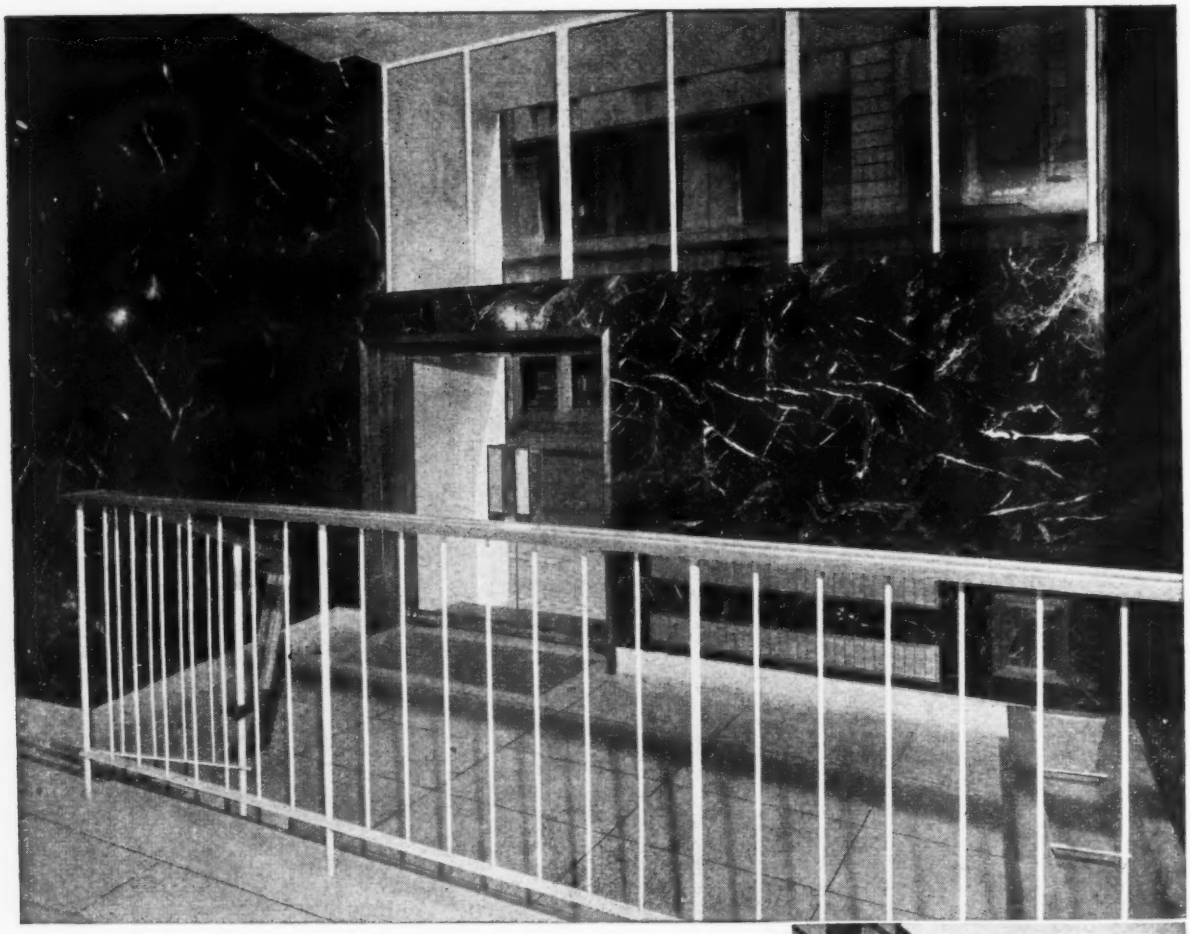
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Architect: Edward H. Eames, A.R.I.B.A.



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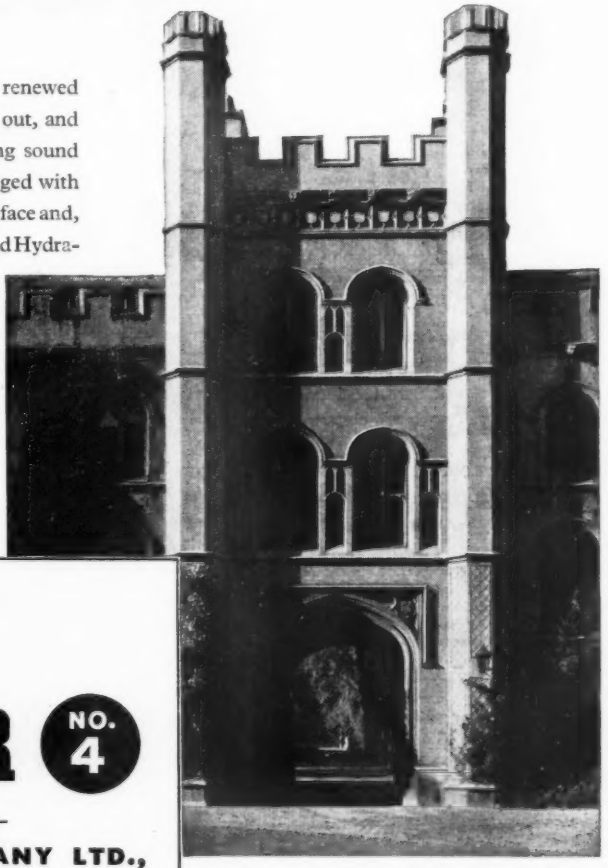


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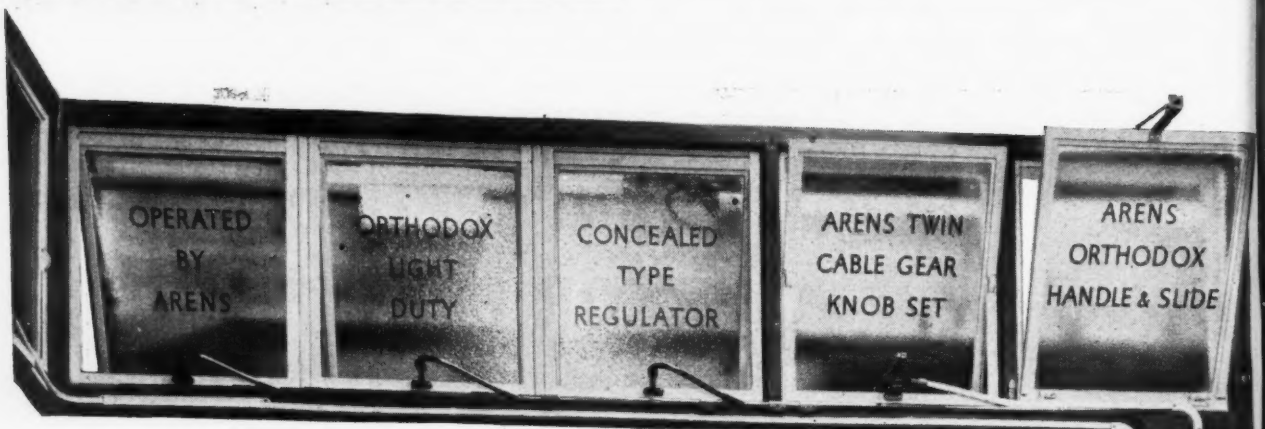
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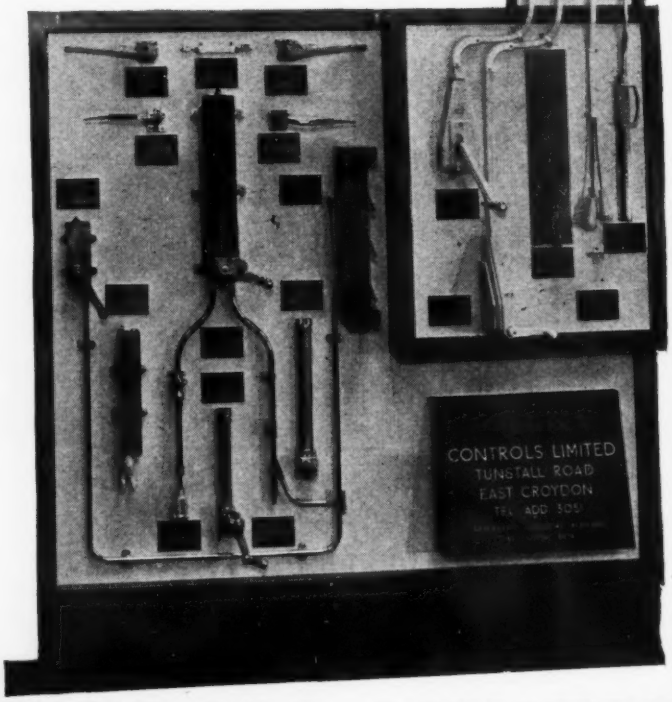
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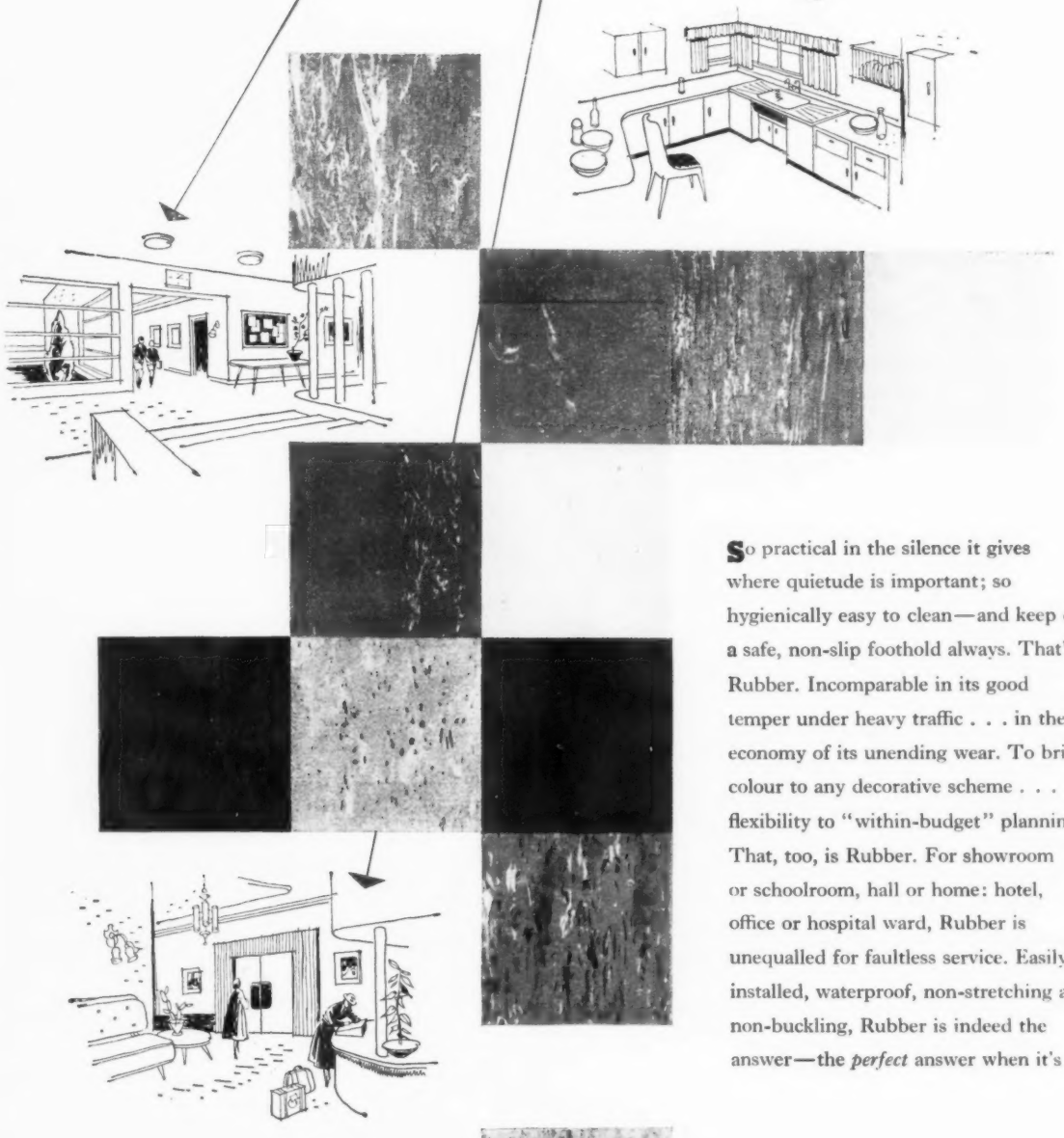
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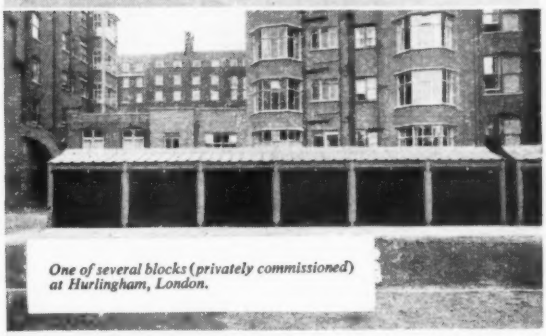
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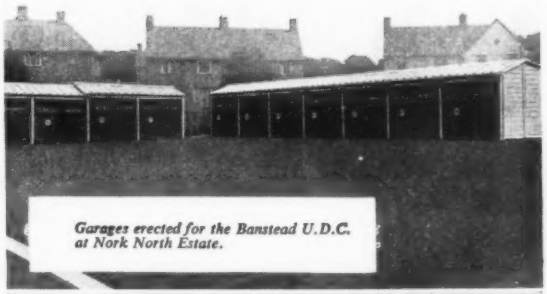
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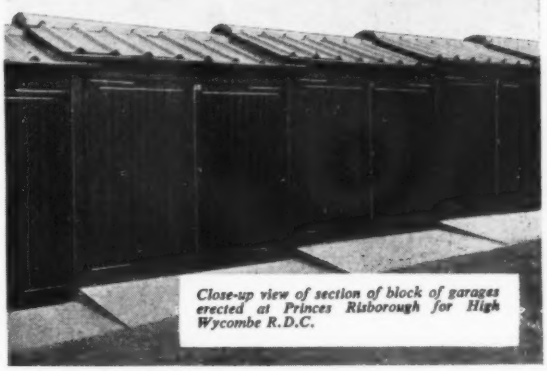
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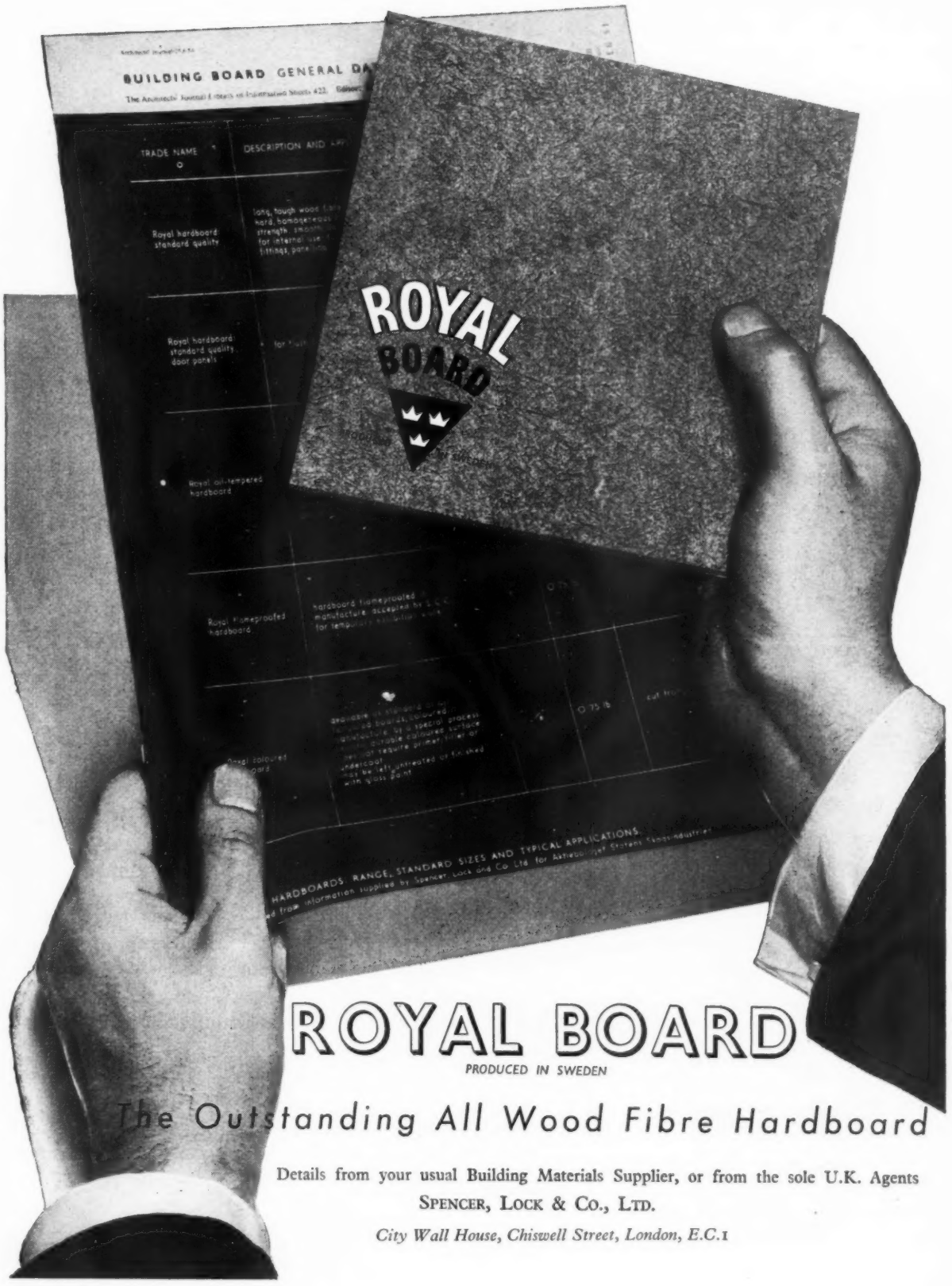


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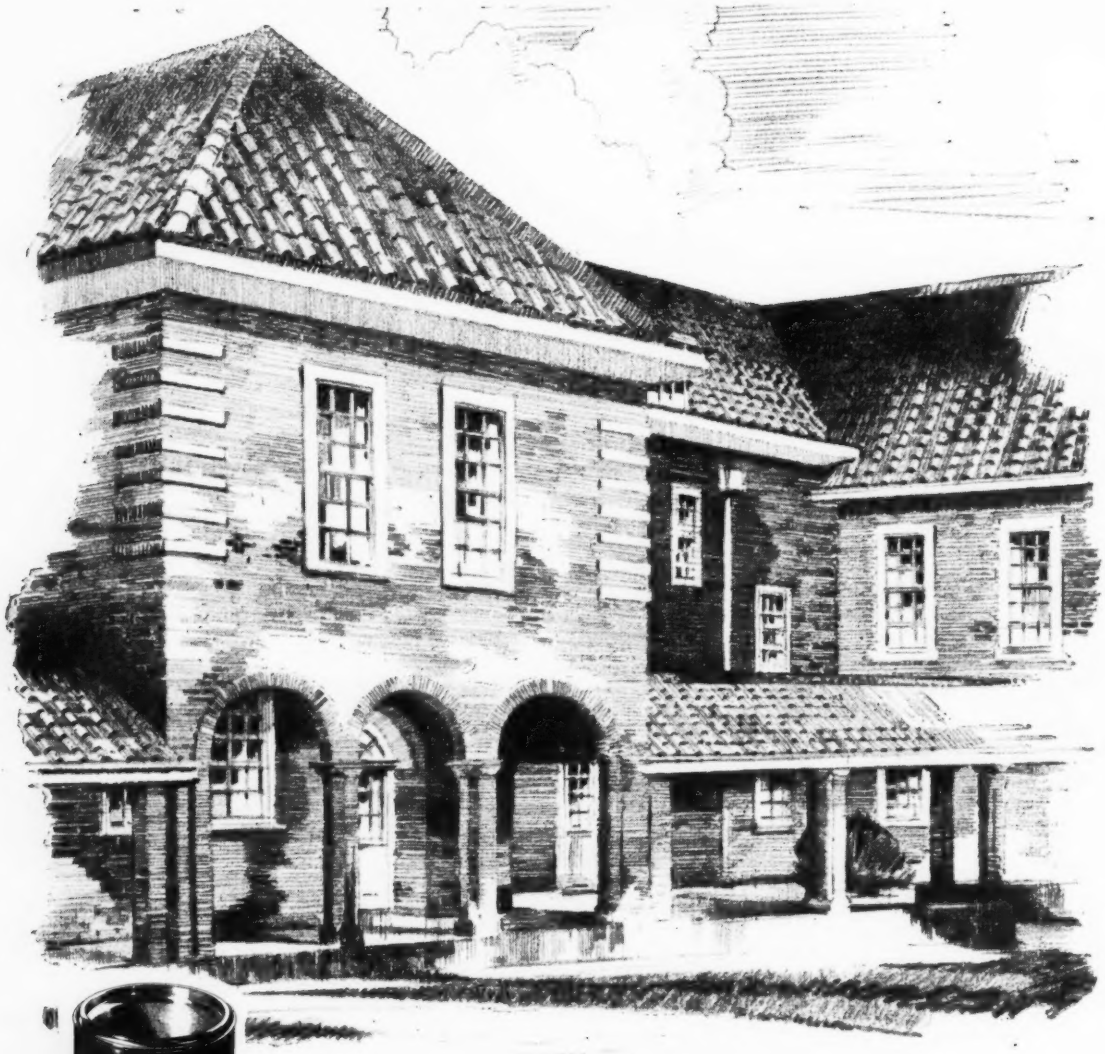
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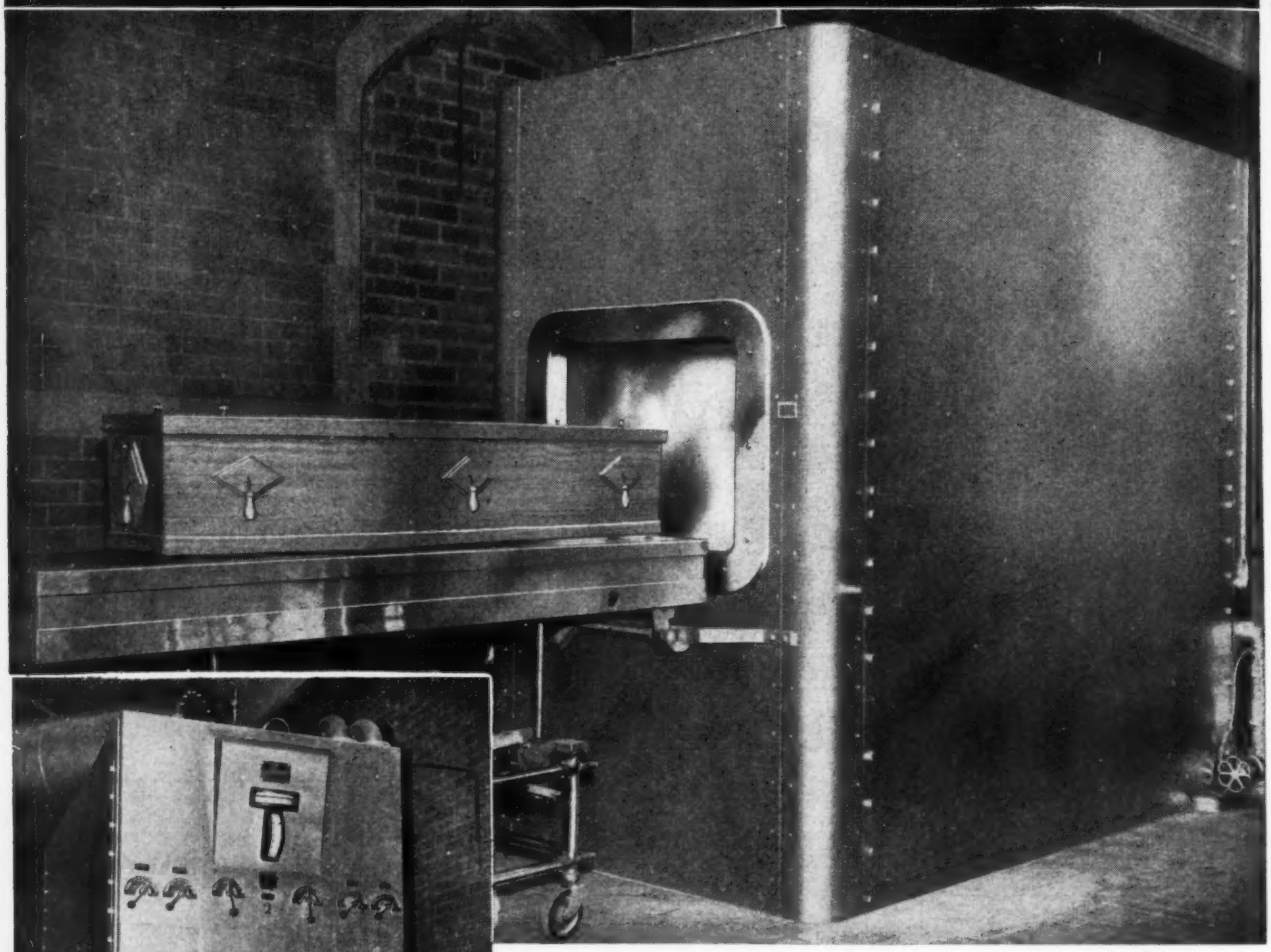
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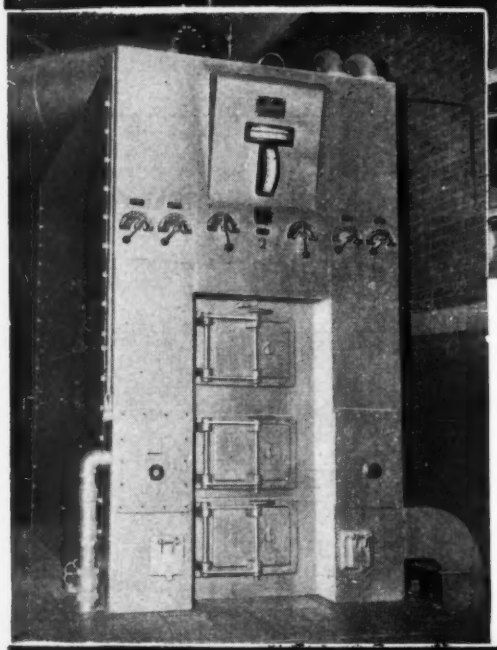
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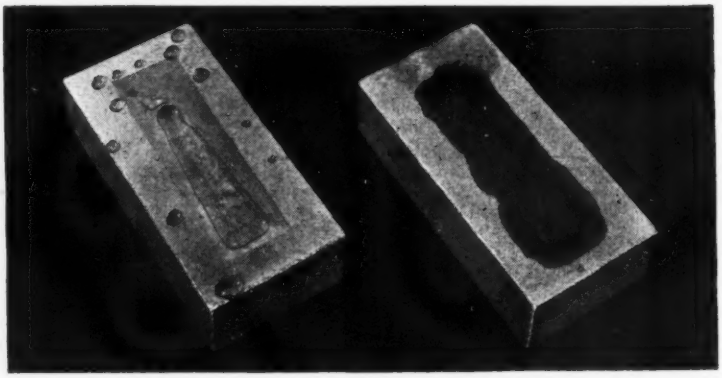
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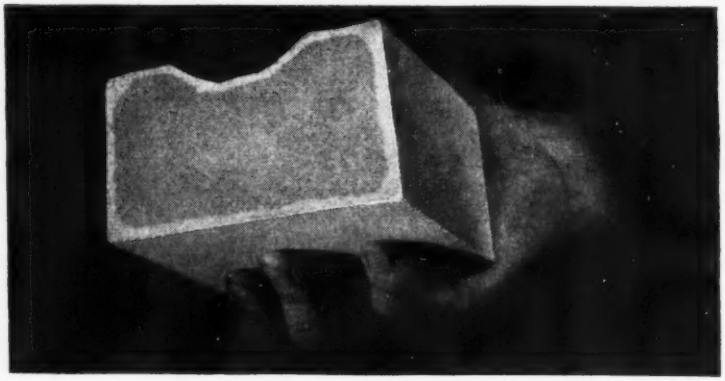
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The left-hand brick has been treated with I.C.I. Silicone Resin R.220. Notice that no water has penetrated the brick. The same amount of water that is lying on top of the treated brick is inside *the right-hand untreated brick.*

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Solutions based on I.C.I. Silicone Resin R.220 waterproof in depth. They do not *form a surface skin but penetrate the brick and line the pores with a water-repellent film. The brick is still pervious to air and water vapour—it can still breathe.*

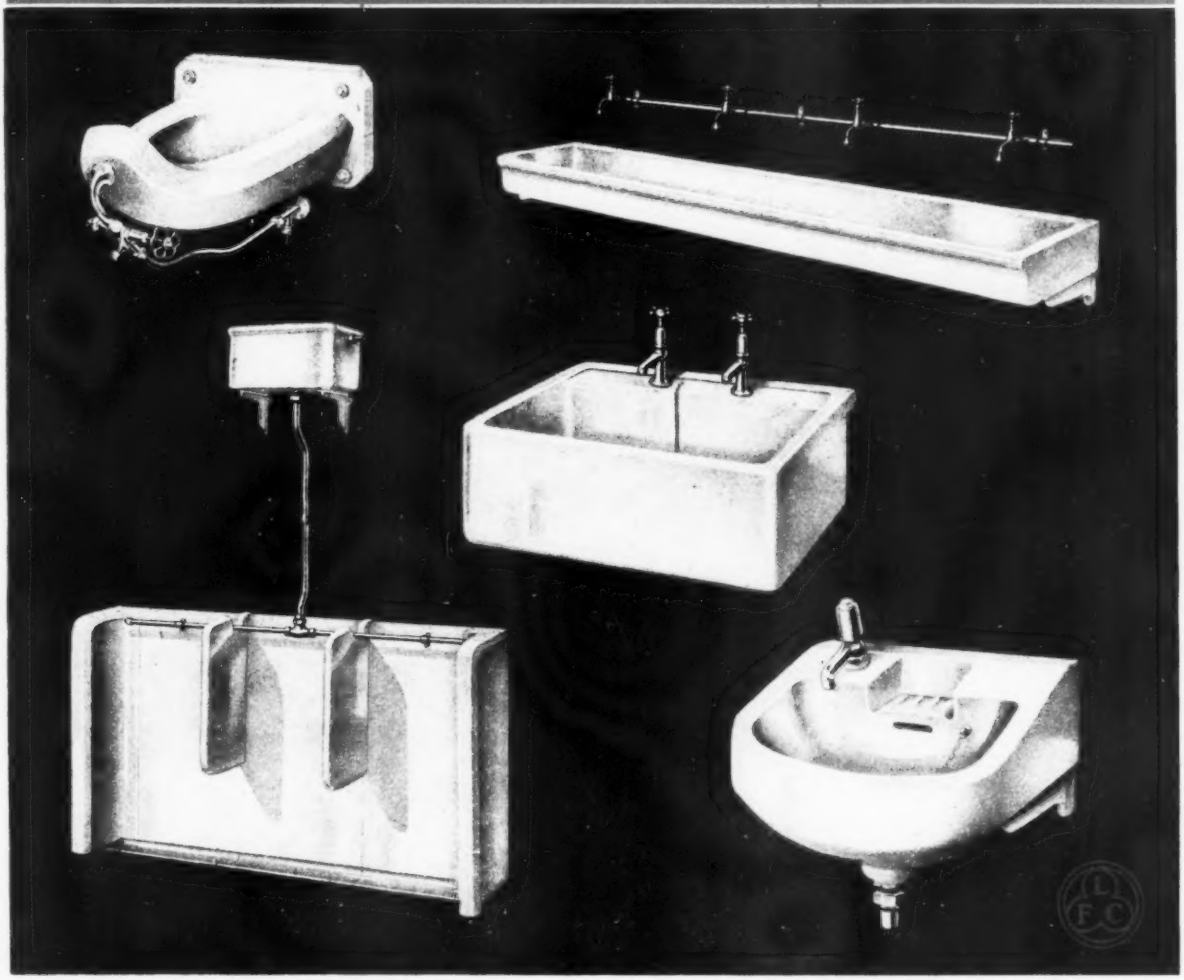
I.C.I. SILICONES FOR MASONRY

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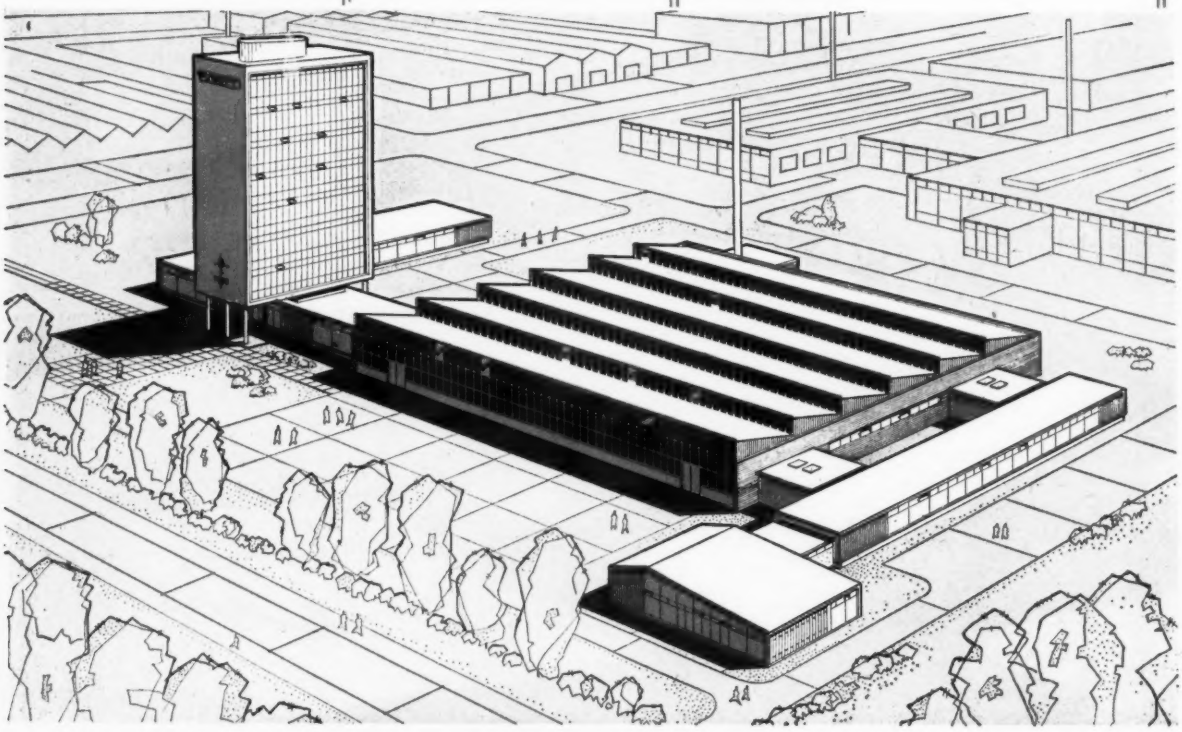
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LONDON OFFICE: LEEDS HOUSE, CAVENDISH PLACE, LONDON W.1. *Telephone* LANGHAM 3511. *Telegrams*: FIRECLAY, WESDO, LONDON

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Standardised structures for Industrial Building

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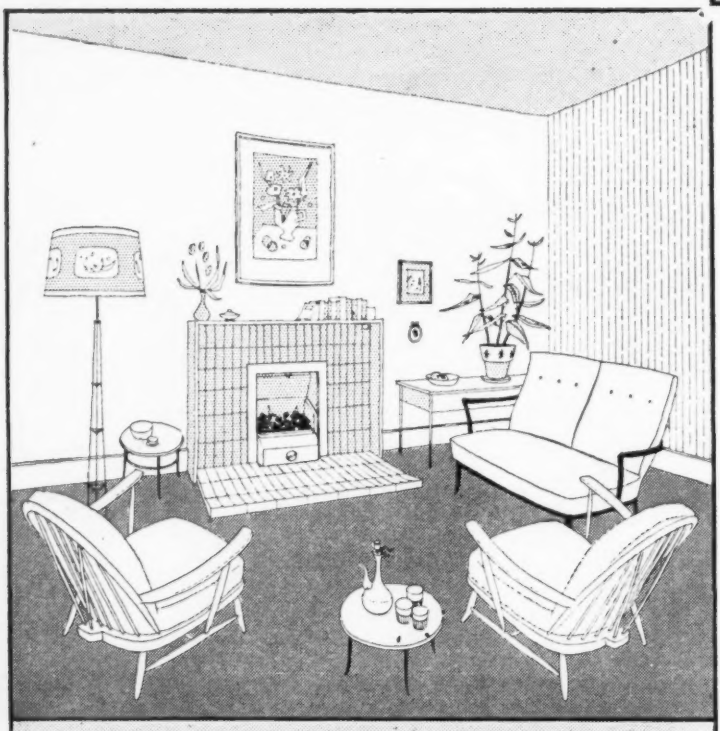
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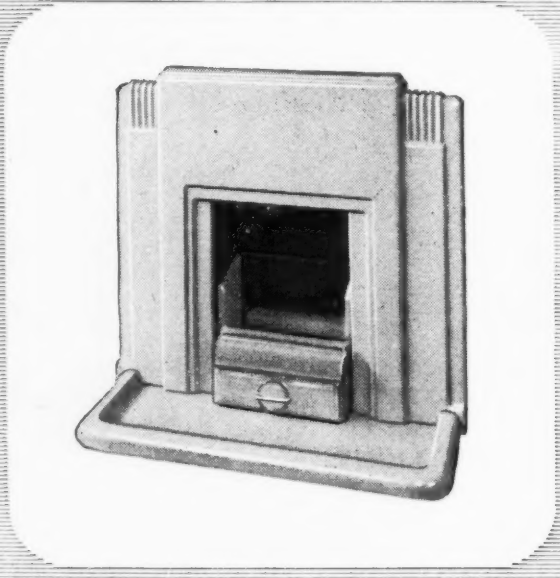
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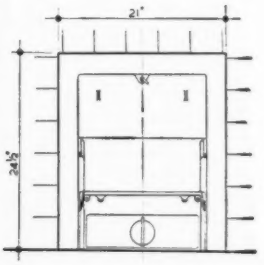
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-continuous-burning open fire with boiler-for low cost housing



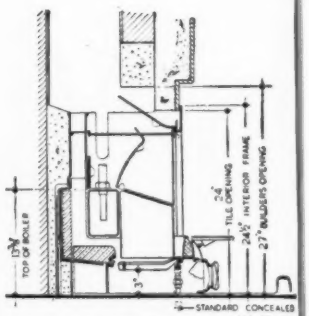
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Tests carried out by a housing authority have shown that the Era Fire costs about £2 less to install than the average fire of this type. Yet it gives full heating up to 1,500 cu. ft. and domestic hot water *or* it can be used to heat two or three radiators.

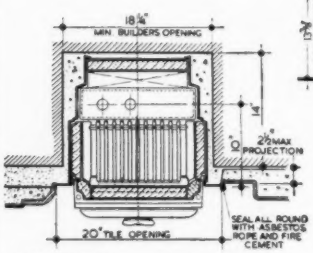
In the horizontal position, the overnight-burning extension serves as a useful trivet during the day.



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COLOURS Cream mottle or black, alisheen black, bramble, bronze or copper.

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Full heating up to 1,500 cu. ft.

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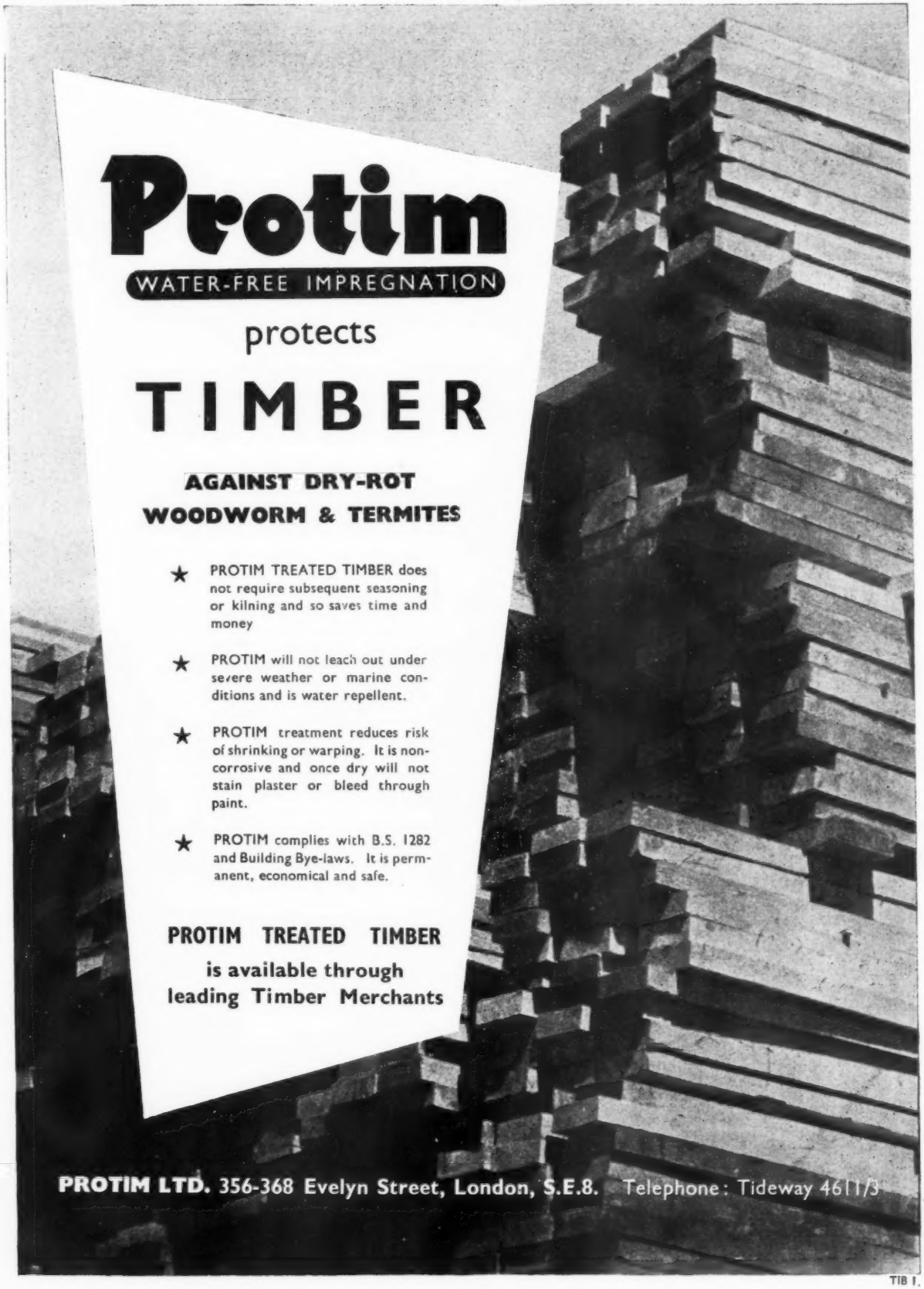
The recommended size of cylinder is 30 gallons (direct or indirect).

For further details about the No. 2 Era Fire and cast-iron vitreous-enamelled fireplaces, write to the Housing Division of :—

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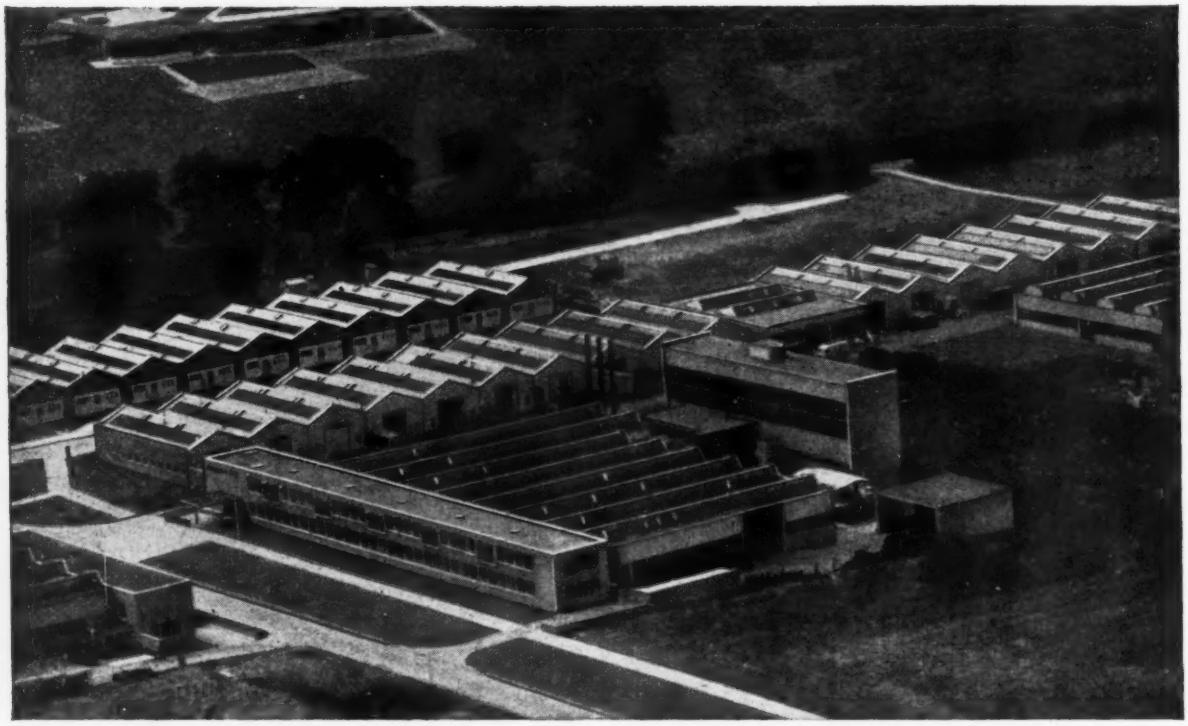
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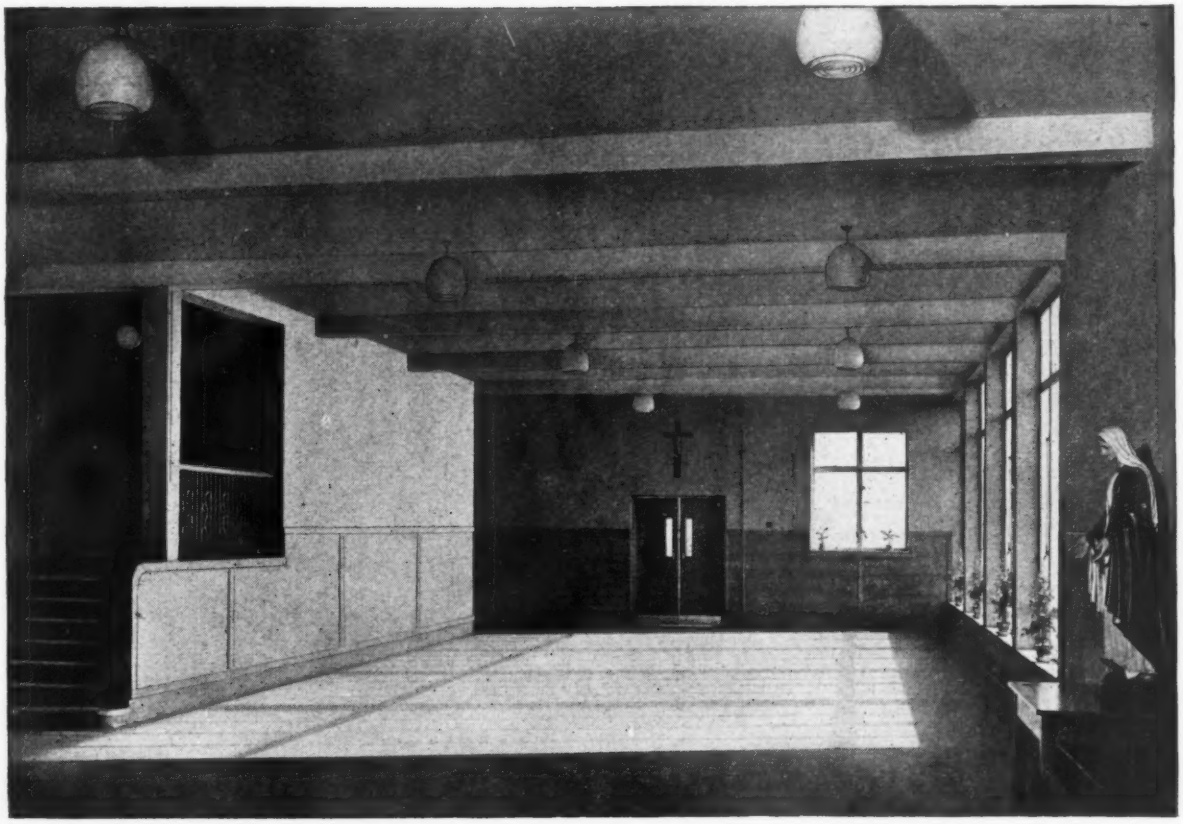
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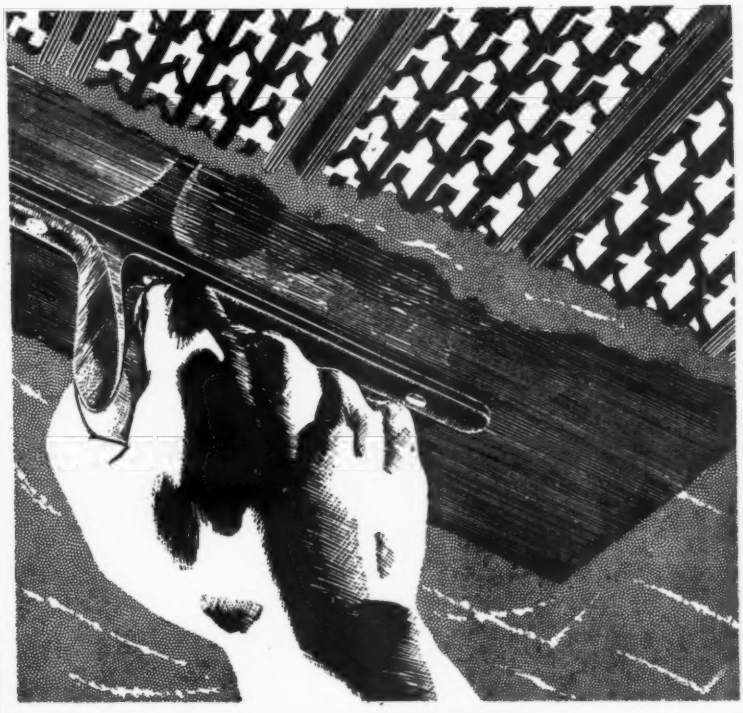
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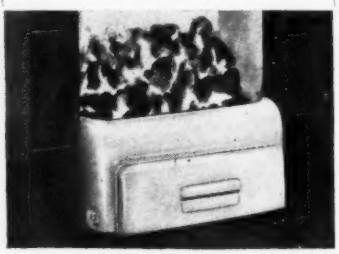


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Slow or fast burning control. Can be used with or without back boiler. Gas ignition available. Vitreous enamel finish in a range of 8 beautiful colours. Burns any solid fuel—best on smokeless.



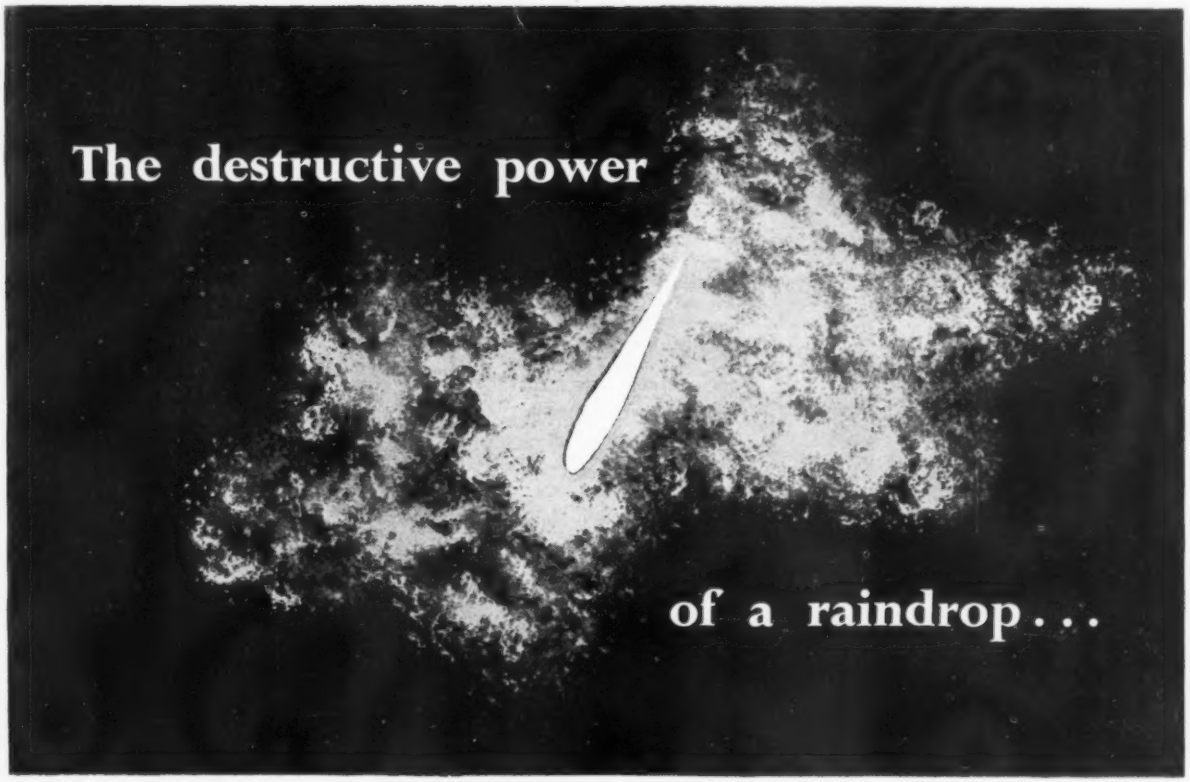
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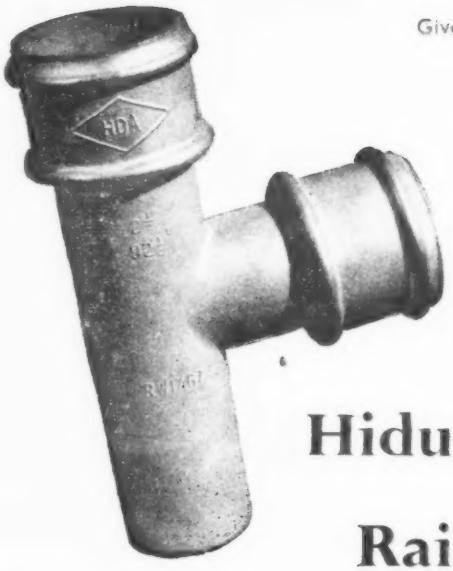


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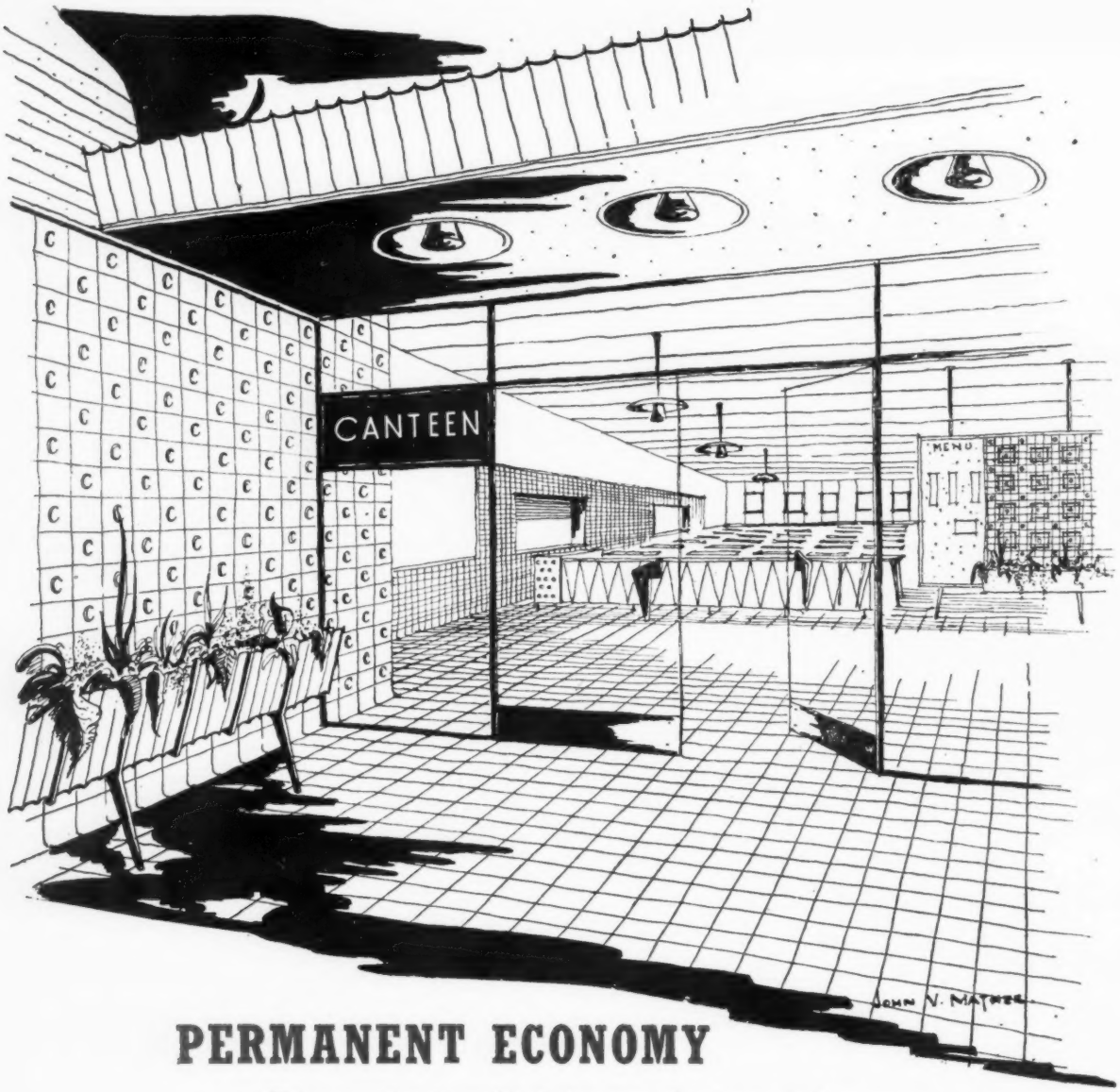


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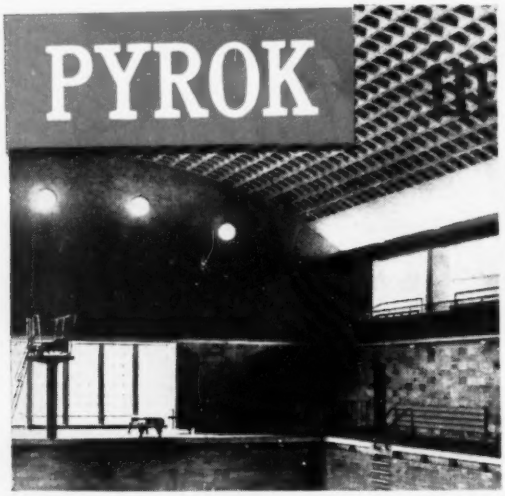
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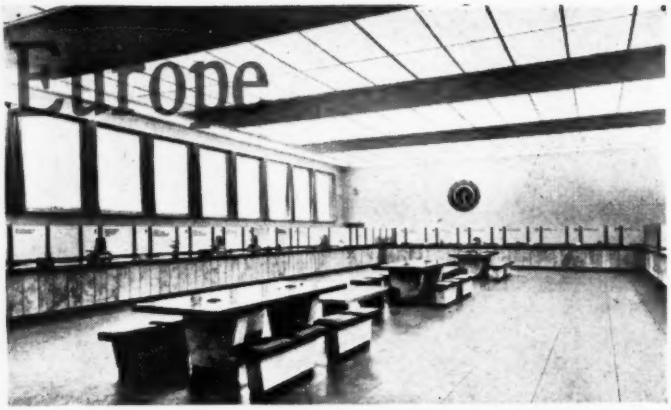
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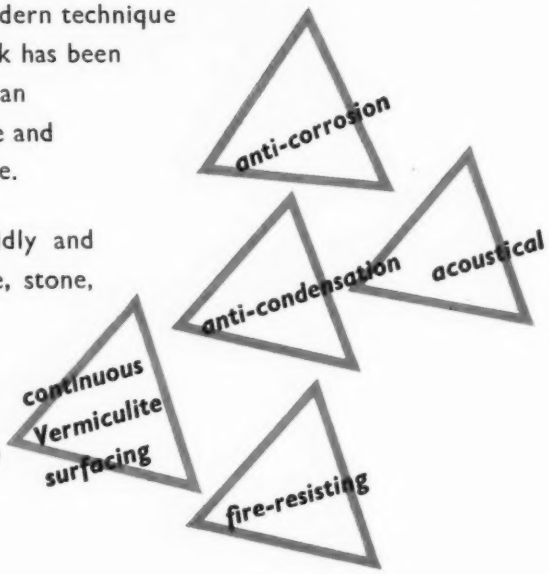


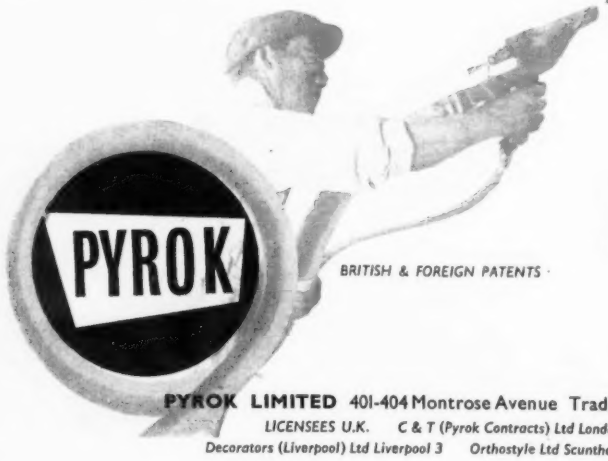




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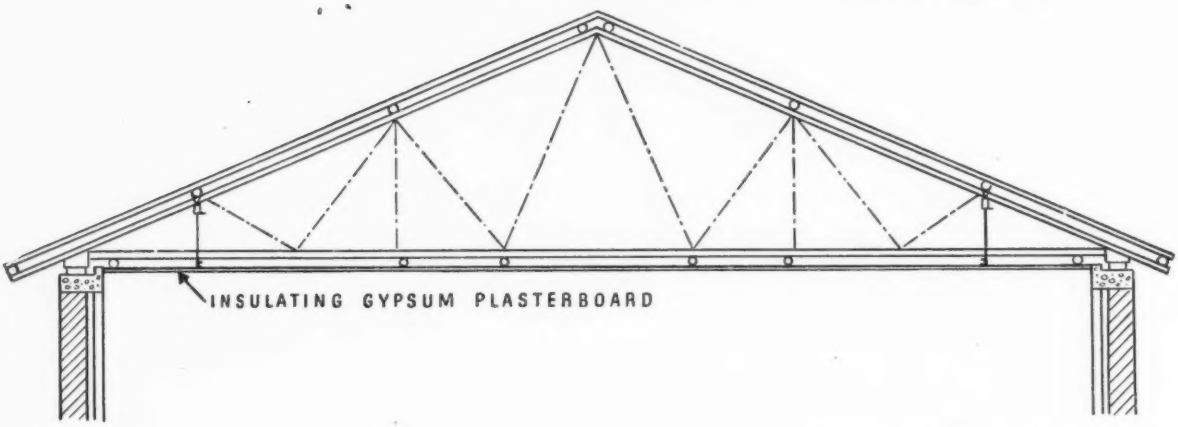
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LS51

Polyflex

Patent pending and *registered trade mark*

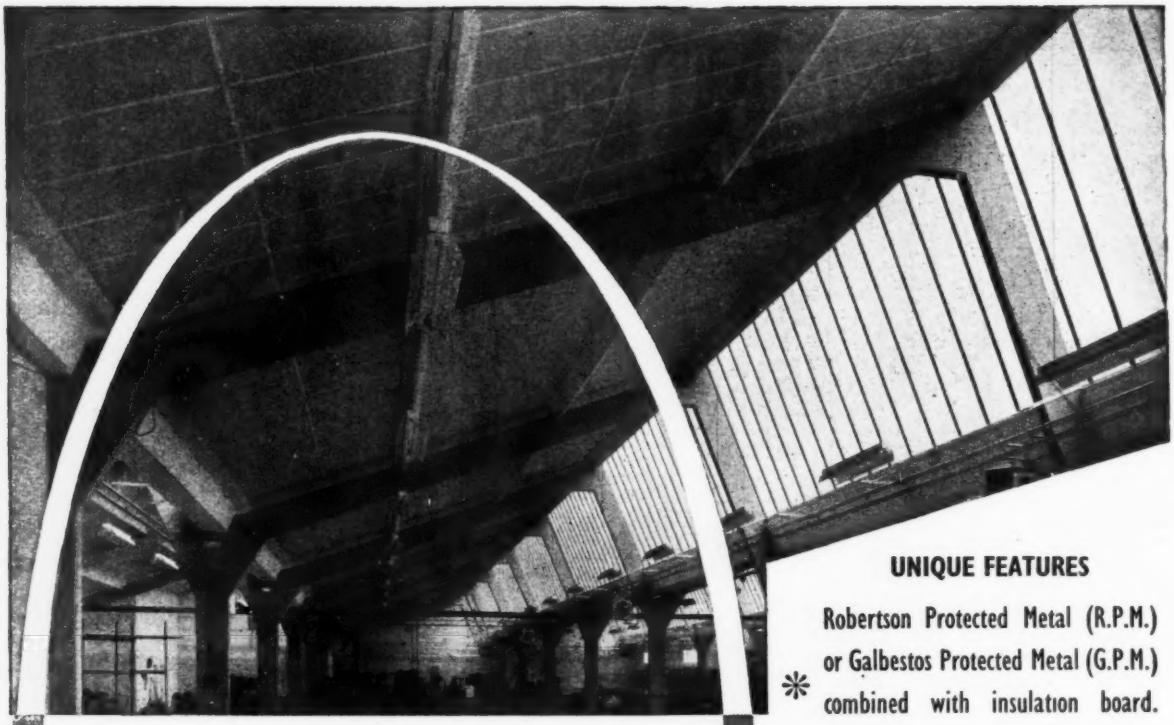
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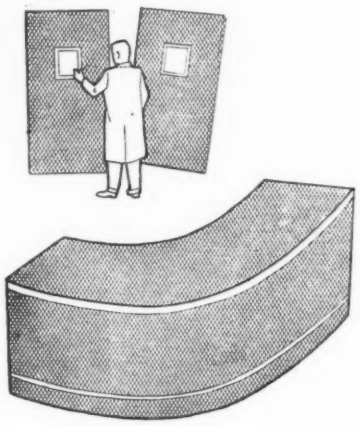
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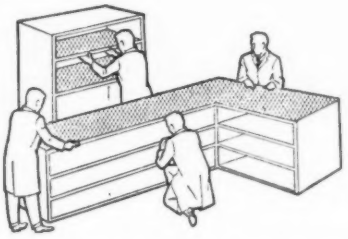
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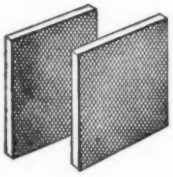
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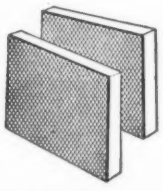
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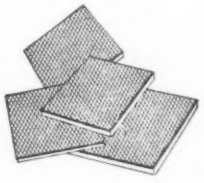
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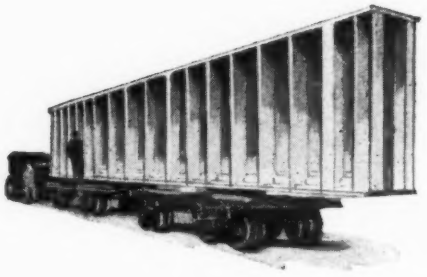


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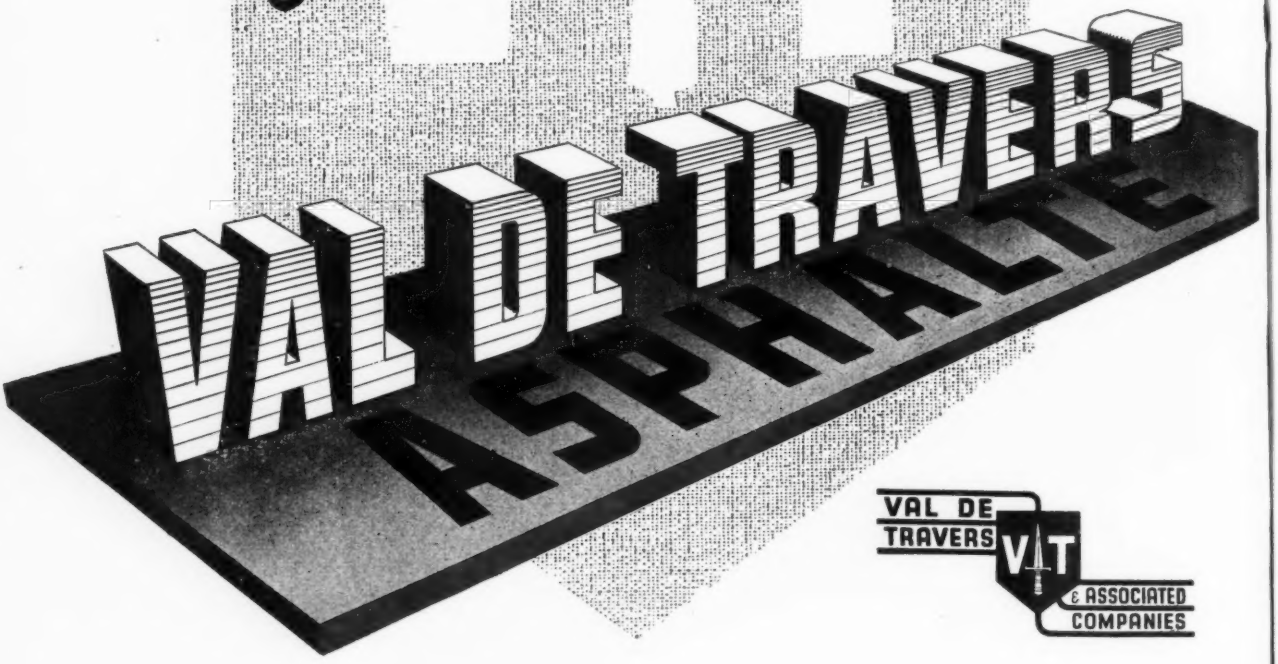
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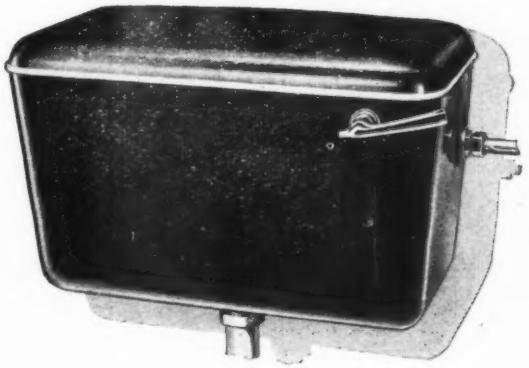
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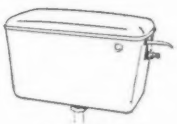
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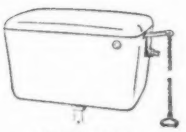
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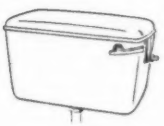
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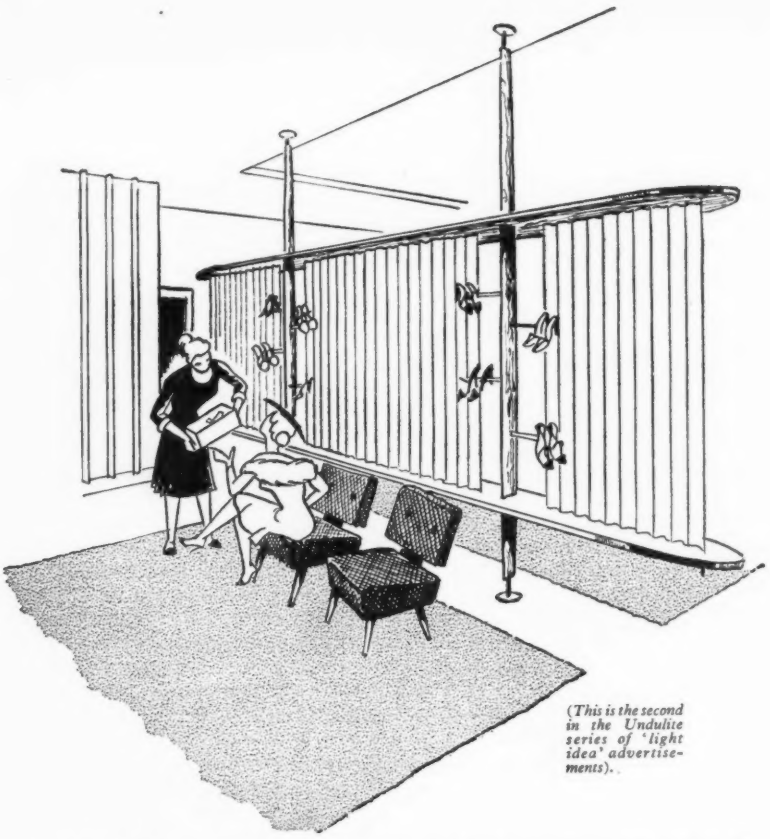
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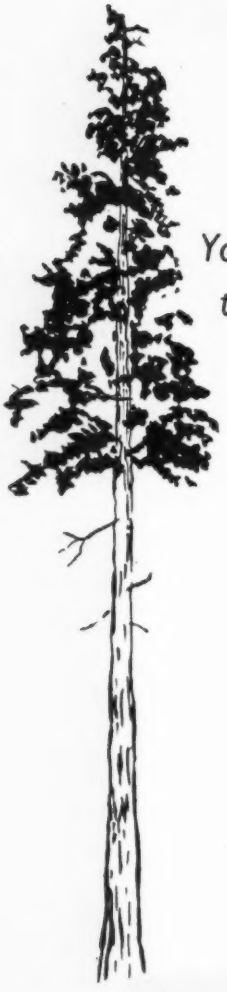
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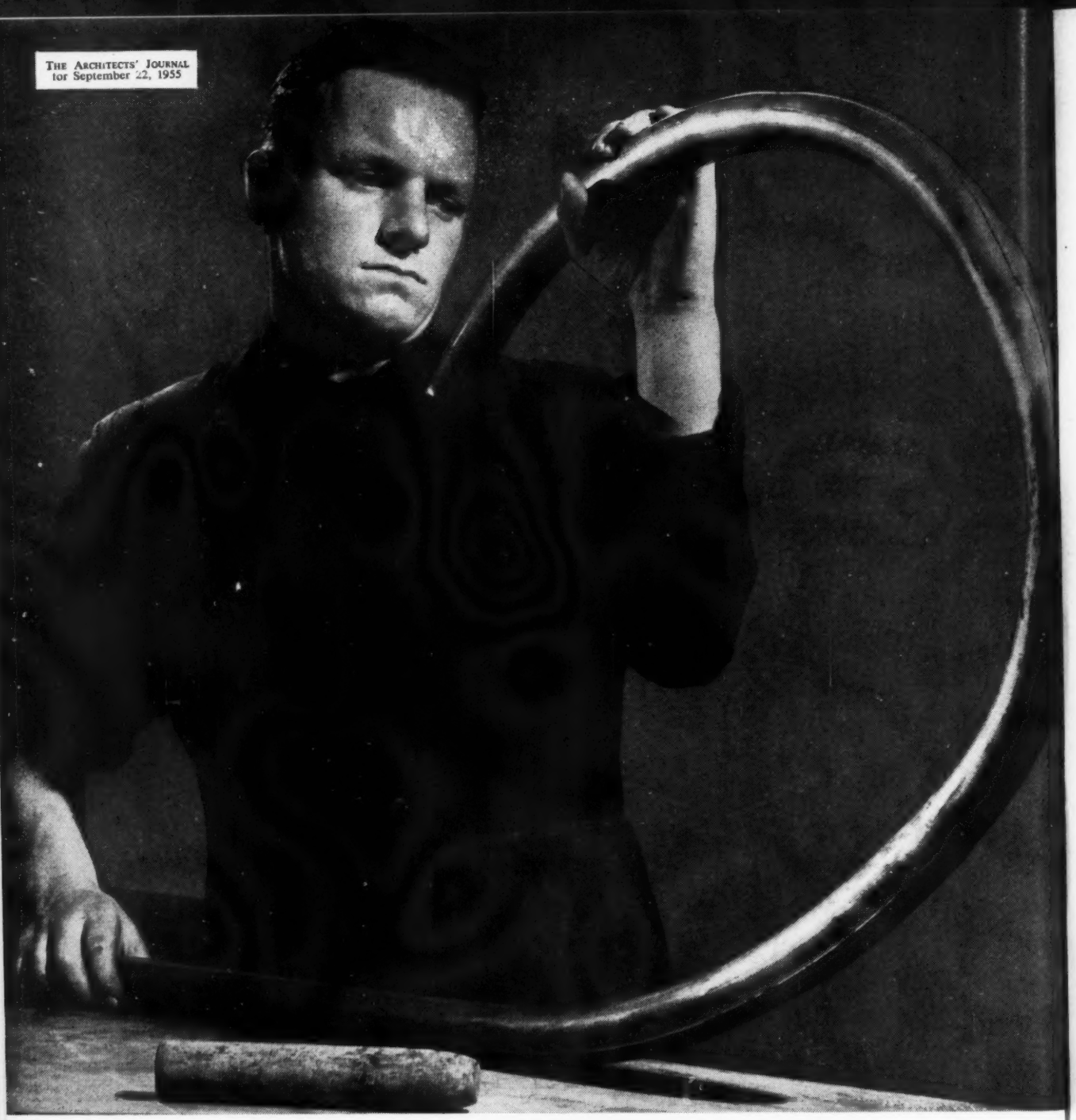
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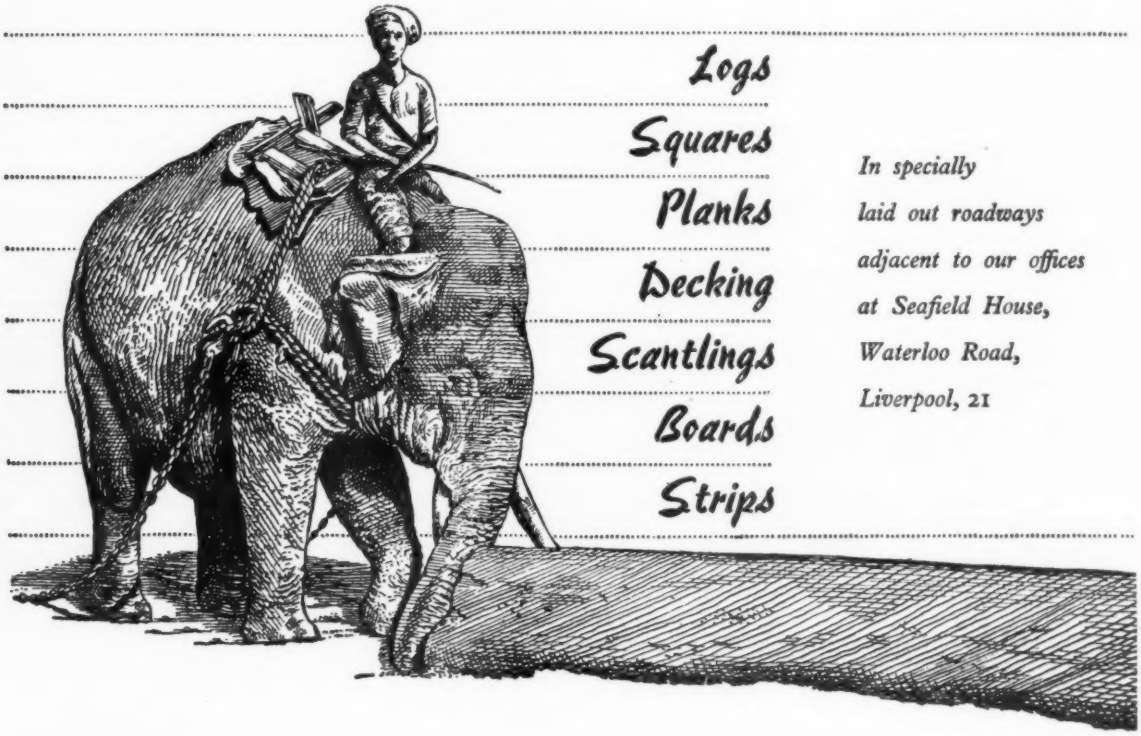
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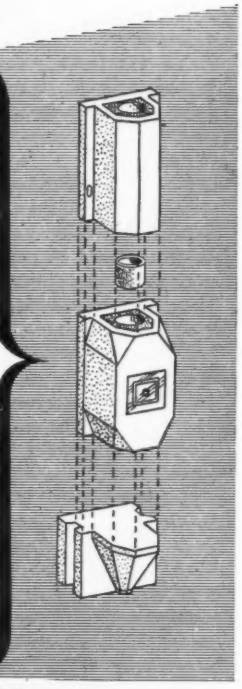


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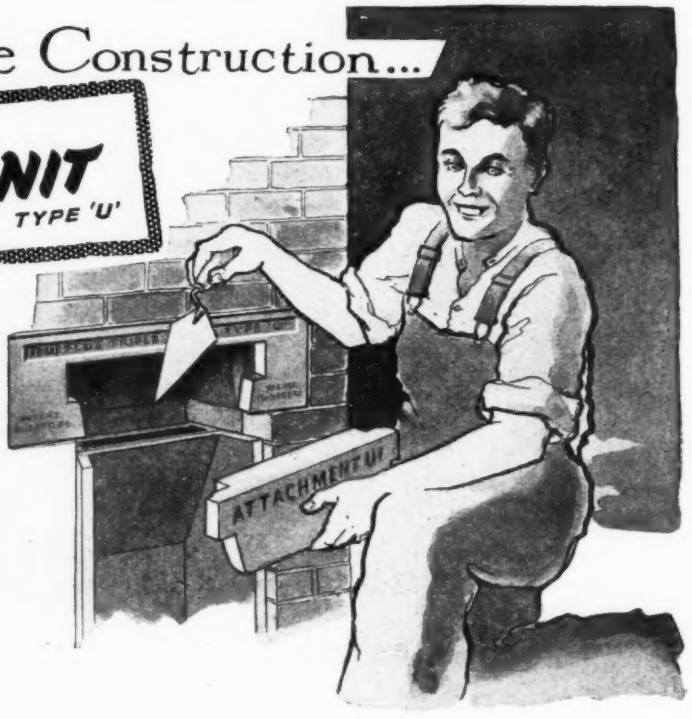
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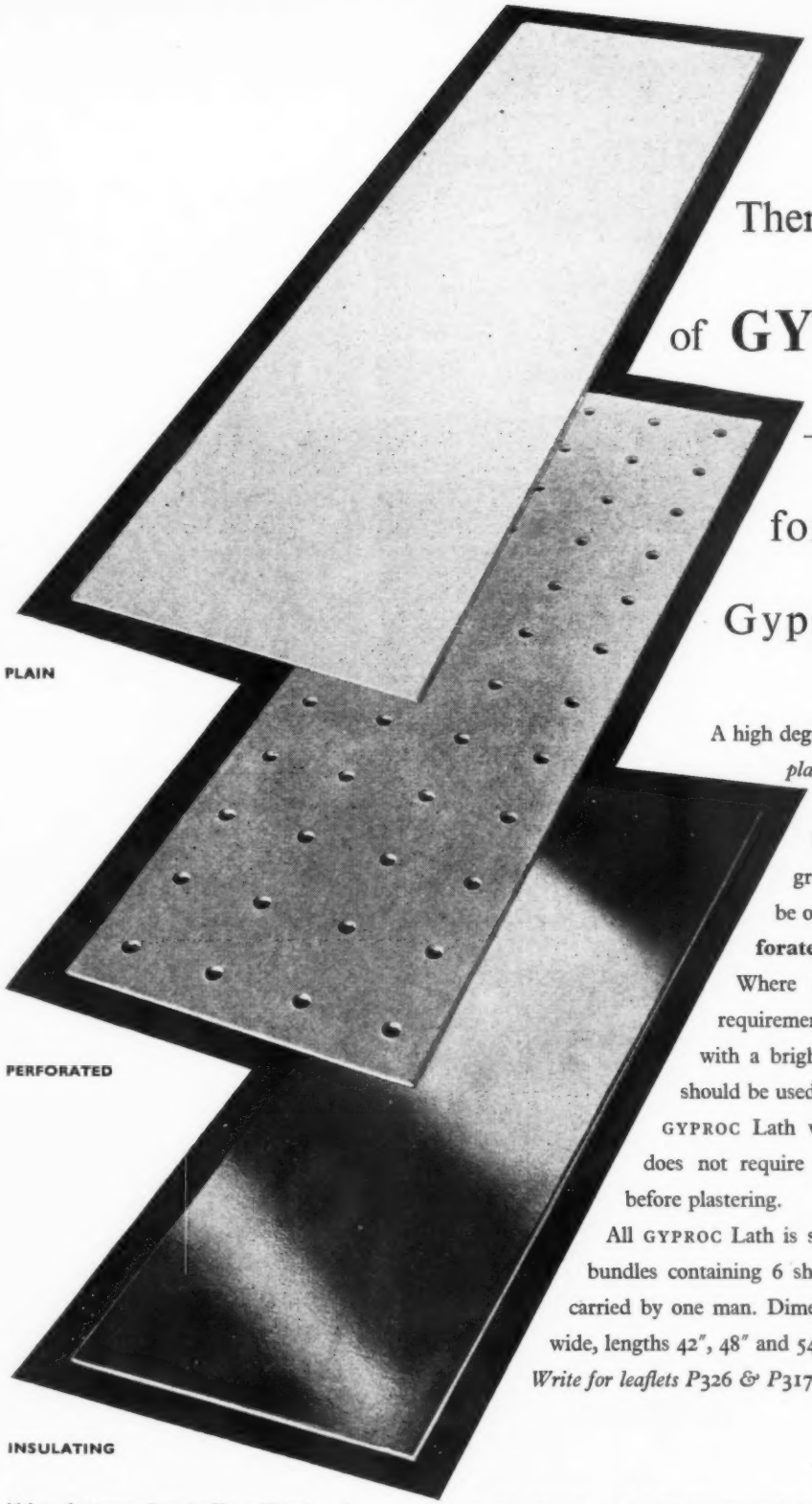
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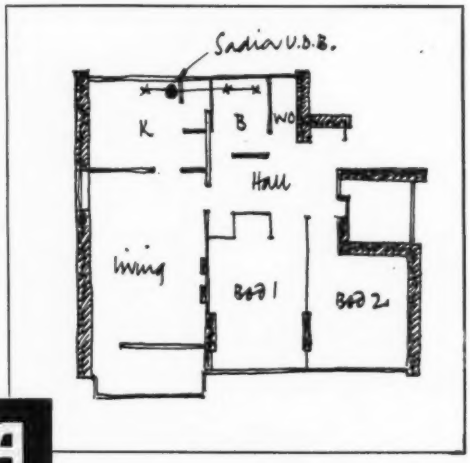
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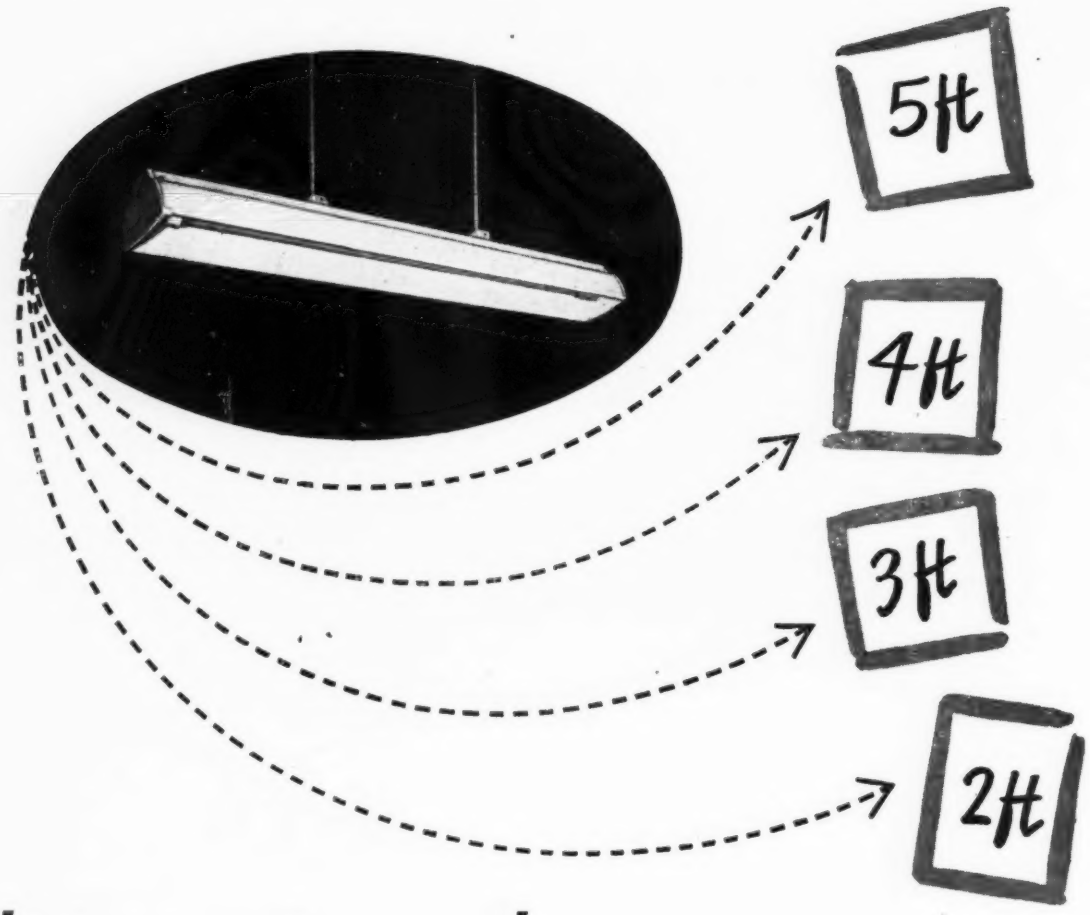
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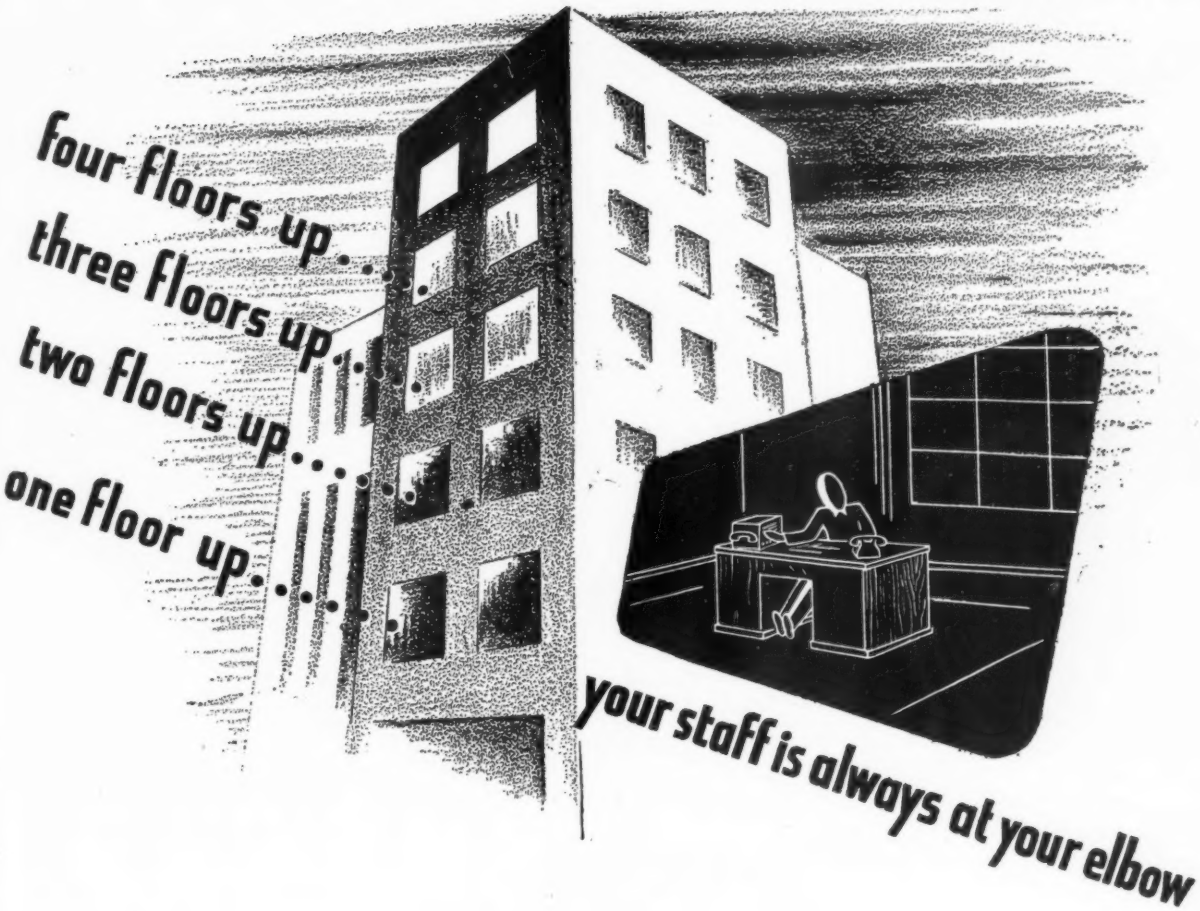
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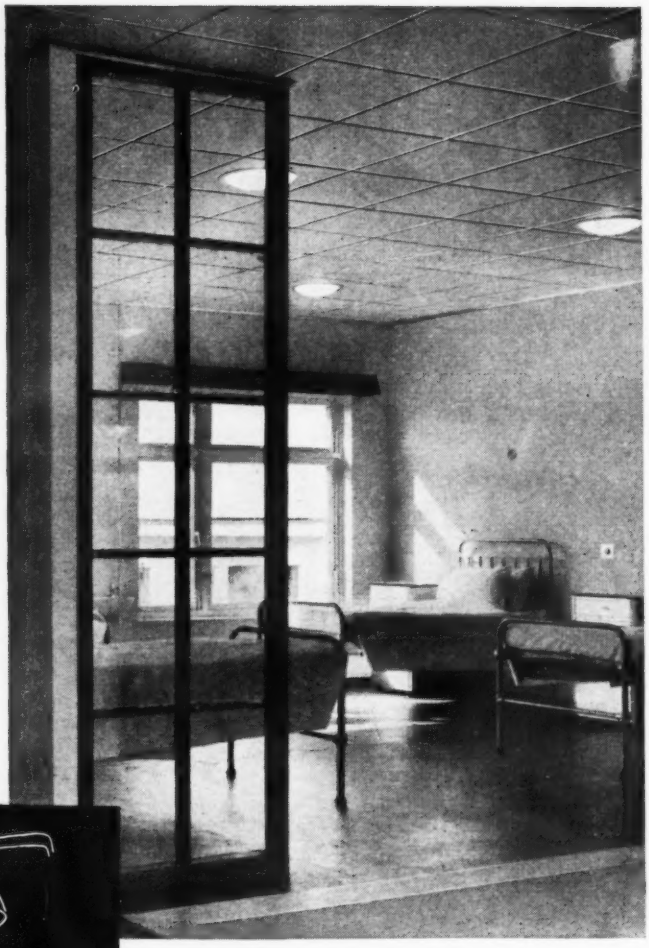
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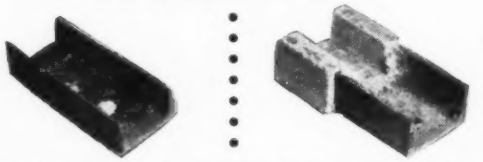
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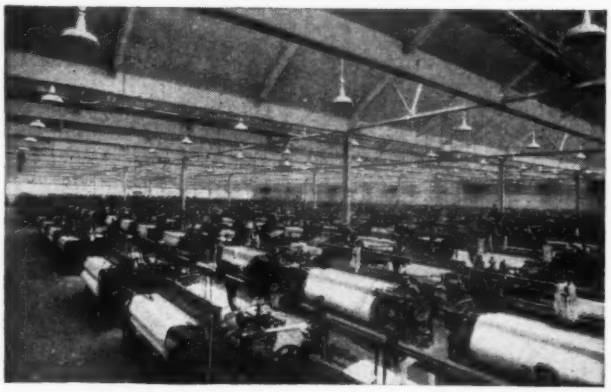
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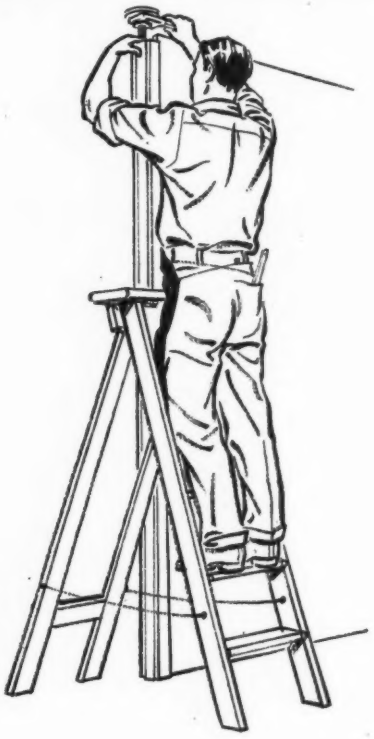
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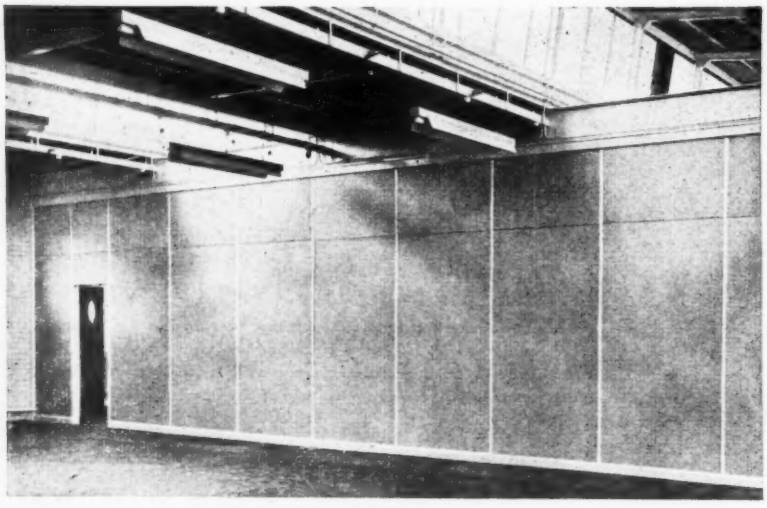
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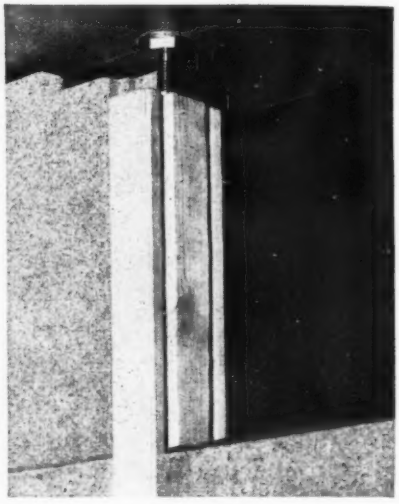
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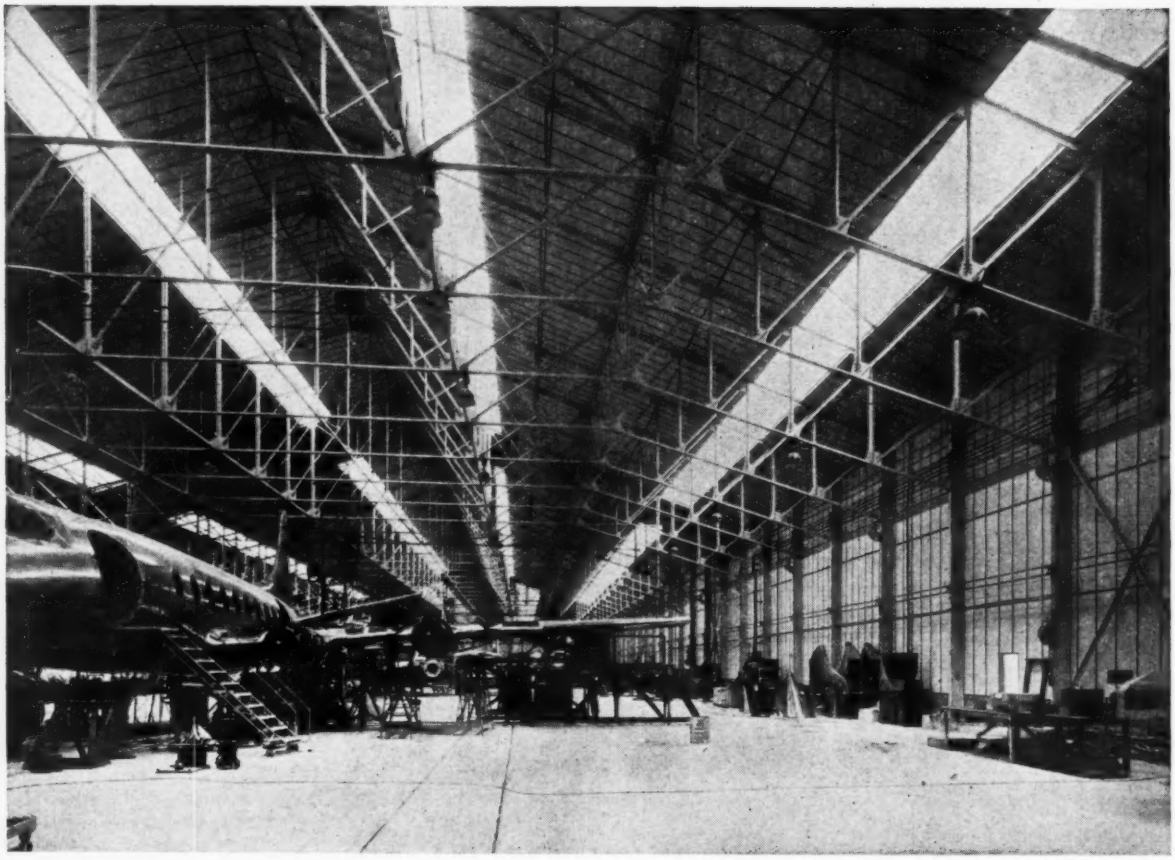
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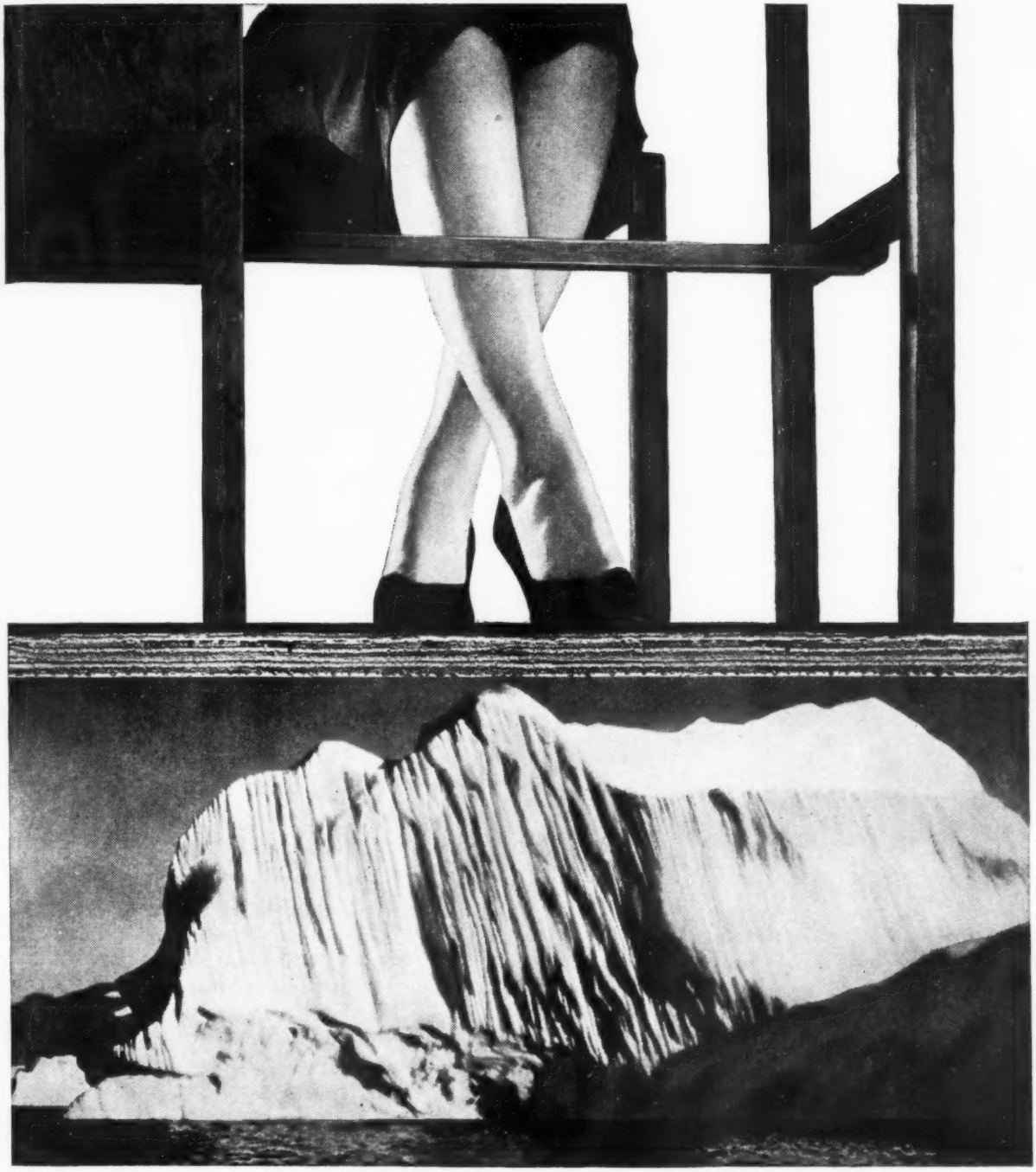
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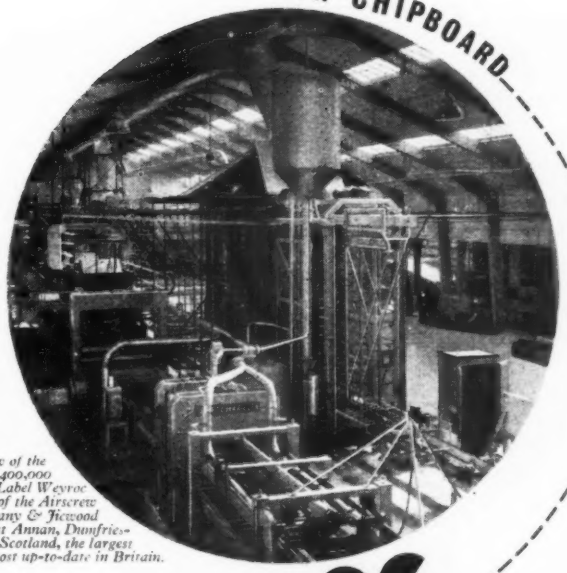
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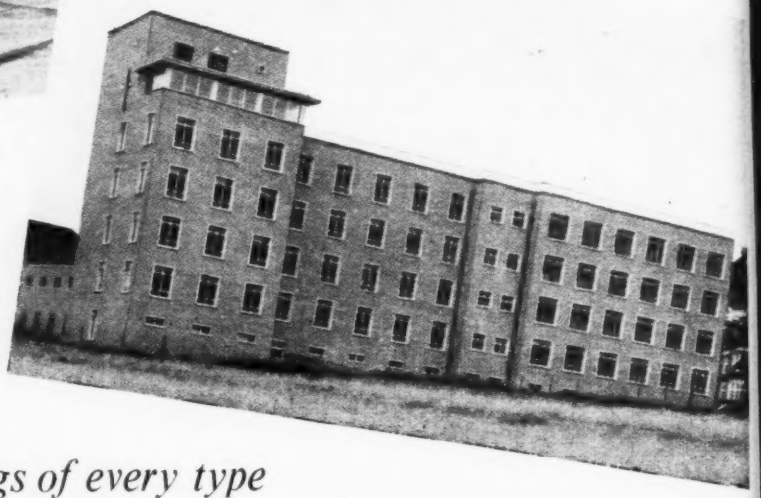
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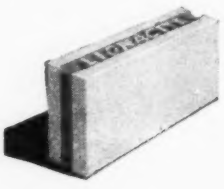
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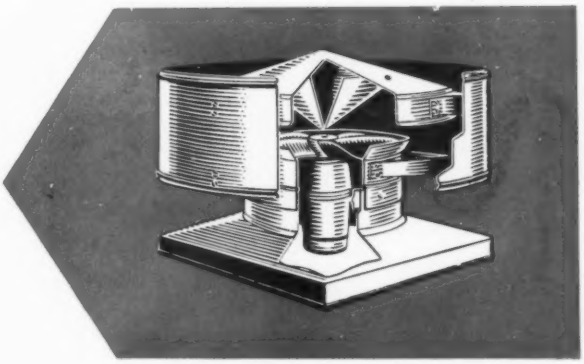
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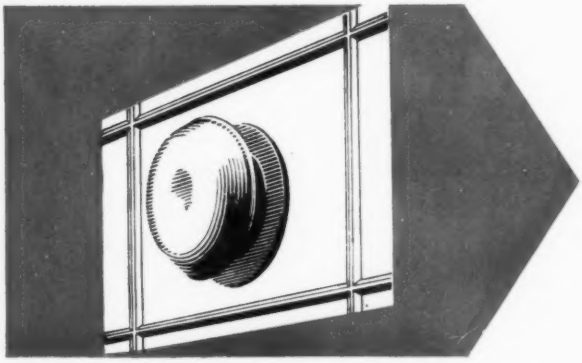
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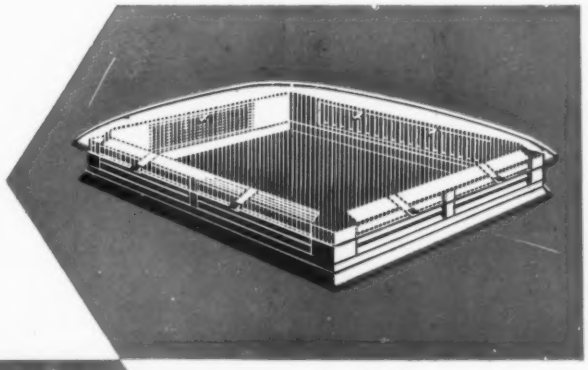
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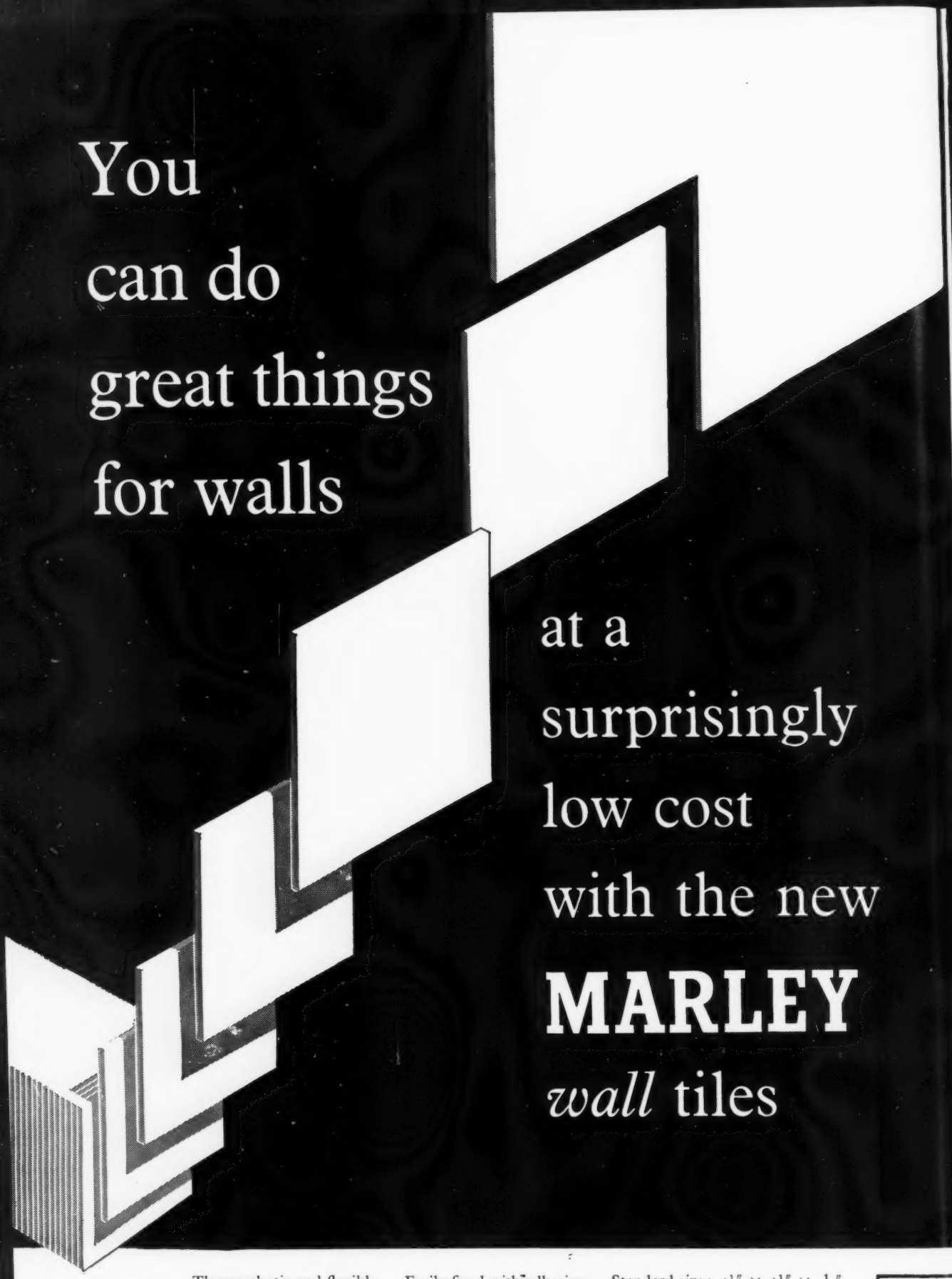
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RECENT THIRD PROGRAMME TALKS . . .

The BBC is continuing to render good service to the profession, and, more so, incidentally, to architecture, with its Third Programme talks produced by the startlingly well-informed and provocative Leonie Cohn, of whom, no doubt, the profession at large has never heard. No matter—ASTRAGAL hopes that architects who are constantly belly-aching about the lack of good publicity for the profession are duly listening to Miss Cohn's latest series of talks by architects, planners and others in which they try and assess what has been achieved in the first half of the planners' twenty-year programme. In all the talks so far one can sense that each speaker is implying—if not always saying—that if only the better architects and architect-planners were given greater scope far more could be achieved. The two great brakes on progress would seem to be the endless check and counter check of bureaucracy and the great lack of knowledge based on scientific research.

. . . ON GREEN BELTS . . .

Professor Myles Wright started the series with a clear-cut proposal for preventing urban sprawl. His proposal derives, of course, from Ebenezer Howard, but Myles Wright enlarges the concept of the mother city, with green belts and satellite towns, to cover the region of, for instance, Merseyside and Manchester: "from Preston to Nantwich and from the Dee to Saddleworth Moor." All the towns and villages within the zone would be placed in one of two groups: the stabilized towns which should not expand and the expansion towns which would. Each town would have a boundary and Myles Wright would allow no building development—even by Government departments—outside the boundaries. "The values," he said, "that have been dribbling over the boundaries of great cities would stop dribbling. They would have to stay or go right out." By such an uncompromising attitude each town would have its green belt—the only disadvantage being, presumably, the inflated values the most miserable slum cottage would attain provided it was in a preserved green belt.

. . . CITY CENTRES . . .

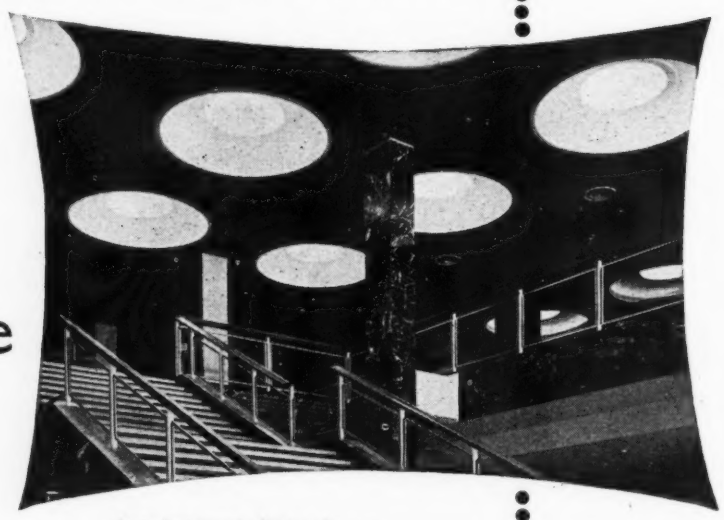
Professor Gardner-Medwin followed a week later in the series by assessing progress in the blitzed towns—and in particular comparing Rotterdam and Coventry. Inevitably he found little that was good in England outside Coventry (though, surprisingly, he found Exeter's new developments "skilfully related to the old") due, of course, to the fact that "redevelopment has been by negative control of piecemeal ventures, rather than by positive concerted action." This he attributes to the fact that "few of the older generation of councillors and officials have the practical vision to appreciate what the future city centre should be, and could be, like."

. . . AND NEW TOWNS

Last week Colin Boyne gave the third talk in the series of seven by describing progress in the New Towns. Unlike most of the people ASTRAGAL meets, he did not find them a failure—just faithful descendants of Letchworth and Welwyn—even more successful socially and economically and rather less successful as examples of the art of townscape. Colin Boyne's proposals for the next ten years of town building would seem to be: accept the fact that standards of living are rising and that everyone will have a car sooner or later; keep densities low for family houses in residential areas and jam most couples and single people into high density town centres, from which cars should be virtually excluded. Two other points were worth mentioning: first, that more attention should be paid to making factory work an attractive occupation—not planned as a necessary evil in a special zone; and that there should be more new towns, instead of old ones expanded by the half-hearted Town Development Act, because it is only with a lively architect-planner and a development cor-

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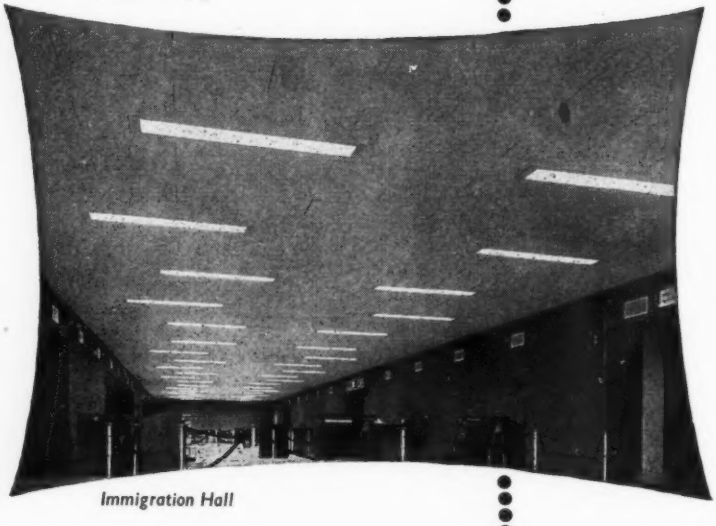
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poration, instead of older-generation councillors (see Medwin's remark above) that one gets the "pioneering spirit necessary for town-making." Colin Boyne seems to see the new towns providing the aggressive pace-making which is otherwise defunct in our indifferent-seeming population, unlike those go-ahead chaps overseas on our right and left.

LETHABY RESURRECTED

In the new edition of Lethaby's *Architecture*, Professor Basil Ward makes the interesting point that this work and March Phillipps' *Works of Man* both appeared in 1911, and that Geoffrey Scott's *Architecture of Humanism* was published only three years later. Whether or not the last was meant to be a direct reply to the other two—or only to the Ruskinian tradition in general—it is clear now how much Lethaby and March Phillipps had in common, and how much they have won the day.

*

It is indeed a good thing that the Oxford University Press should give us—for a fairly modest 18s.—this new edition of Lethaby's classic, one of the few architectural classics in the English language. It seems to be as succinct and as wise as ever, and to have dated very little. Basil Ward has added a preface and an epilogue in which he gives some biographical facts about Lethaby and some comments of his own. These comments are not without interest when once one has mastered the professor's prose—a violent contrast to Lethaby's beautifully limpid English.

ANOTHER ITALIAN EXHIBITION

Following the exhibition of Italian Industrial Design (at, perhaps, rather too short an interval) the Italian Handicrafts exhibition—also at the Italian Institute in Belgrave Square—makes a less formidable impression on the viewer, even though it is full of good things. Perhaps it is rather *too* full: the mind begins to boggle . . . not *another* comical bottle with a hole through it, not *another* basket-work chicken or organic ash-tray (and how did those typewriters—product of you-know-who—get into a handicraft exhibition?).

*

As always with Italian handicraft it is the relationship of past and present, manual and mechanised, which is so intriguing and so baffling. If it is a superbly functional solution you want, then the Chiavari chair, hand-made to a basic pattern that hasn't changed since the eighteenth century, even if it is signed by a living designer, is your answer (and cheap too). If it is a high machine-finish and organic shapes, as modern as the hour, that you are after, then hand-made pottery can offer them, even though probably made by almost mediaeval methods. In fact, as you will see from the pictures above, it is the basically rococo chair that looks sensible and functional, the essentially modern (in shape and colour) two-tone vase that looks fanciful and frivolous.



On view at the Italian Handicrafts Exhibition: a beech wood chair, designed by Professor Rambaldi, and an earthenware vase, designed by Maria Campi.

WHAT THE EYE DOESN'T SEE

Leafing through what appeared to be yet another new architectural magazine, but proved on inspection to be *Architecture and Building* with a new, new-look, ASTRAGAL found not only Gill bold condensed headlines, hand-written captions and other typographical signs of the times, but also a paper by Jacqueline Tyrwhitt analysing the results of a questionnaire intended to discover how much of their environment the students of a Canadian university ever noticed.

*

The results may seem shockingly obvious as Miss Tyrwhitt sums them up —" . . . the eye-catching appeal of buildings follows the order: direct utility, outstanding bulk or colour, and (a bad third) architectural merit or any outstanding characteristic of structure"—but even if she has not told us anything we could not have told her, such research projects are still valuable for the information they give on the side.

*

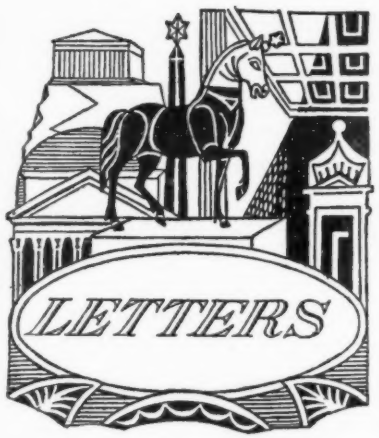
Thus anti-Subtopians would surely feel justified by the implication that an advertising slogan forty-odd yards long makes so little impression on passers-by that four people out of five cannot remember what it says, and that in the case of a neon sky-sign advertising beer the equivalent figure was nineteen out of twenty. It appears that the publicity men have pulled a good deal more wool over their own and their clients' eyes than they have over the public's, for this survey suggests that most forms of advertising are quite as invisible as most kinds of architecture to the average intelligent citizen. Surely the ground space which is currently wasted on poster-hoardings could be more profitably employed for things like ribbon development, ammunition dumps, spoil tips and transport cafés —or even for the class of buildings which apparently *were* visible to these Canadian students; mail-order houses, coffee shops, photographic dealers and *The Monetary Times*.

ASTRAGAL



The LCC Keeps In Keeping

After High Wimbledon, the LCC scheme which included several point blocks, comes the LCC's High Wandsworth scheme, which is nothing *but* point blocks. When the Council acquired the 10-acre site, adjoining Wandsworth Common, from the former Royal Victoria Patriotic School, the MOHLG agreed to the proposed housing development on certain conditions. The Ministry wanted the scheme to be planned in such a way as to preserve a sense of spaciousness in keeping with the character of the Common and to maintain a view between the two parts of the Common lying either side of the railway. As can be seen from this picture, the architect to the Council, Dr. J. L. Martin, devised a scheme which satisfied these conditions. He restricted the development to five tall blocks, each about 60 ft. square and 100 ft. high, and sited them so as to avoid massing and the disturbance of trees. Each block has a central core containing two lifts, two refuse chutes, two staircases and a duplicate system of mechanical extract ventilation. On the ground floor there are tenants' stores and a communal laundry. Every other floor houses four flats. There are 214 altogether, comprising 567 rooms. The cost of the scheme is approximately half a million pounds and the rents are 28s. 5d. for one room; 37s. for two rooms; 47s. for three rooms, and 55s. 4d. for four rooms.



C. J. Mitchell, L.R.I.B.A.

E. L. Ackery, *of British Electrical Development Association*

T. Alwyn Lloyd, F.R.I.B.A.

Get Rid Of Amateurs

SIR,—You published an editorial on planning officers and plans submitted by unqualified persons in your issue for September 8. Your last few paragraphs, on page 311, appear to be somewhat irresponsible and damaging. Surely this is a case of every man to his own trade (or profession). The fact that a layman has the audacity to prepare, and submit to a local authority, a rough drawing completely lacking in design and construction, should not provide an excuse for any local government official to re-design it for him at the ratepayers' expense, to say nothing of other complications which might arise, such as approving his own work.

To state that such a layman has "made up his mind that he cannot afford, or does not want to afford, the services of an architect" is surely doing a great injustice to the architectural profession and is entirely the wrong approach.

Every effort should be made to discourage amateurs (which should include builders and estate agents) from preparing and submitting plans for the approval of the local authority—immediately by persuasion and eventually by law. It would appear that your article has not attempted to do this, and as a reader of your JOURNAL for some twenty years this is a great disappointment to me.

C. J. MITCHELL.

Surrey.

Hot Water In Schools

SIR,—In the Technical Section of your issue of August 11, 1955, the following statement appears at the foot of page 200, under the heading "Hot Water Supply":—

> "The demand for warm water in the lavatories proved to be continuous rather than intermittent. The electric immersion heaters were never switched off during the day and were therefore expensive to run"

It is made clear on page 201, under the same heading, that in later schools calorifiers heated by coils from the heating

POINTS FROM THIS ISSUE

ASTRAGAL reviews **recent broadcast talks** page 375
Russian building team in Britain page 380
The **Architects of Tees-side** page 381

The Editors

THE COID AGAIN

WHILE the criticism of the Council of Industrial Design, which appeared in the JOURNAL for August 11, was mainly on the grounds of what the Council does not do, and the subsequent correspondence showed a wide divergence between the Council and the JOURNAL about what it ought to do, and by what means, a far more damaging criticism of COID has now been published by a body which seems in general agreement with its policy. PEP's new publication *Better Industrial Design* seems satisfied that the COID should exist to propagate something called "Contemporary" which is, apparently, a "fairly coherent style"—an idea which will repel all who genuinely wish for better standards of product-design. Gropius, it will be remembered, emphatically declared "There is, and can be, no Bauhaus style . . ." and all great reformers of design have insisted that improvement begins with the rejection of style.

But having accepted this aim as proper to the COID, PEP in assessing the Council's success in pursuing it says, "Business men . . . admit that contemporary design has made very rapid progress in Britain . . . Progress has been most extensive in goods where aesthetic considerations are secondary, for example, machinery, instruments, kitchen tools and equipment. In trades like furniture and soft furnishings where personal taste counts more, progress has been patchy, although these are trades at which the Council has driven its spearhead." Or, in other words; success has been greatest where the Council's aims have been irrelevant, and least where it has tried hardest.

Although one suspects that PEP may be innocents abroad in the jungle of product design, this is a damaging indictment of the COID for failing in its own terms. The COID is, of course, of very real value in that it has started everyone *thinking* about design. Nevertheless, it is clear that the COID, and indeed the whole subject of product design, is now on the table for discussion, and the debate will at least be better informed now than before because "Design Review" on which, it appears, the Council will stake its case, will be bigger, better-displayed, and more accessible in its new quarters in Haymarket House. We wish the Council success—a new kind of success—in its new home.

THE ARCHITECTS' JOURNAL RESEARCH FOUNDATION

The Directors of the Architectural Press announce that they have decided to supplement existing facilities for Building Research by founding a new Research Foundation. This is to be conducted in association with The Architects' Journal *and is to be devoted to those aspects of building research which directly concern the architect in practice. It is intended that the Foundation should award one Fellowship each year. A Research Board is being formed and it is hoped to announce further details of its functions and the names of the members next week.*

circuit were provided in the lavatories.

We would be glad to know whether the change was made with accurate knowledge of the cost of providing hot water from the fuel-fired boilers, or merely on an opinion.

We can understand that in winter when the boilers are required for space-heating there might be some saving, but we very much doubt whether this would be the case in the summer, when the boiler would have to be kept alight solely to provide hot water.

E. L. ACKERY.

London.

[The author of the JOURNAL article, referred to above, writes:—

Warm water was not provided in the children's lavatories in the summer months when the space-heating installation was not operating. It was felt that during the summer term the children could wash in cold water.

In staff lavatories warm water was provided by local electric water heaters and in fact it is still in the latest schools.

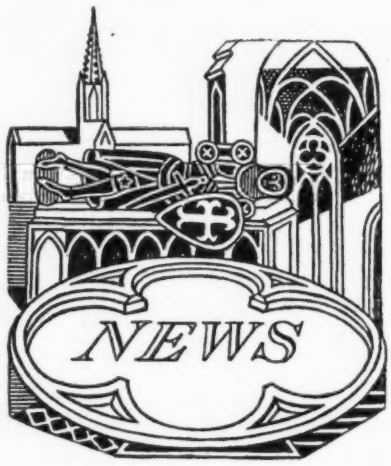
The change to local calorifiers from electric water heaters in children's lavatories was therefore based on running-cost figures, comparing electricity against the additional solid fuel required by the heating installation. I do not think accurate figures were in fact, available concerning the latter, but an estimate was made; figures were available on the running cost of the immersion heaters. The cost was quite high because the need for warm water was greater and more continuous than had been expected.]

Houses That Didn't Win Medals

SIR,—I share the view expressed in a recent JOURNAL as to the misunderstanding caused by use of the words "Private Enterprise Housing" in the MOHLG's 1955 housing award announcement. I took these words to imply private enterprise (or speculative) as distinct from Municipal Housing. Indeed this was my view up to the time that I acted as a member of a Medals Awards Committee in one of the Regions. I ventured to suggest that in announcing future contests for this Medal, the words "Private Houses" should be used. That would, no doubt, bring in a larger entry from architects.

T. ALWYN LLOYD.

Cardiff.



CREDIT CUTS

Their Effect on Building

Small builders have found it difficult to secure finance for private housing for the past three or four months. But now most of the large contractors are also being affected and some are being compelled to refuse industrial building contracts which they would have been glad to compete for only a few weeks ago.

This was stated by the Industrial Correspondent of the *Financial Times* for September 10. He went on to say: An acute shortage of labour of all kinds—but particularly of skilled craftsmen—is also imposing physical limits on what it is possible for contractors, both large and small, to undertake. The shortage of structural steel is also imposing delays.

The amount of new housing construction begun is falling far behind the forecasts made at the beginning of the year, although the volume of industrial and school building is still rising sharply.

In the second quarter of this year the number of new housing starts made fell by 7 per cent. compared with the second quarter of 1954, and it is believed that when the figures for the third quarter are available they may show a further corresponding decline.

The number of houses under construction at the end of the second quarter of the year was 294,811, compared with 322,380 on July 1, 1954.

This has made possible some transfer of workers from new housing to industrial building. In the three months ended July 1, for example, there was a fall of 3,000 in employment on new housing and a rise of 28,000 in employment on other new building work.

The volume of factory building under construction has been rising month by month and is probably now more than a third higher than a year ago. It is, however, as yet only reflecting the first stage of the revival in the figures for approvals of new industrial building which began over 18 months ago.

If all the schemes which received initial authorization last year and in the first half of this year were to advance at the same pace towards actual construction, then a further advance in new factory starts could be expected, at any rate, in the spring of next year.

But most of the large civil engineering companies already have contracts on hand which will keep them fully occupied for some time ahead.

Many of them are now, in any case, fully extended financially. They cannot take on more work unless they and their clients can find fresh sources of credit. And in the last few weeks at least two large companies have had to turn business away because their search for finance in the City has been unavailing.

Most of the largest industrial companies which have been moving towards the placing of building contracts under major development schemes have not shown any hesitation either as a result of the uncertain general economic prospect or because they have been unable to find the necessary capital.

But here and there, particularly in medium-sized concerns, a number of schemes have been postponed. In at least two cases considerable development projects, which had advanced to the stage at which detailed planning had been completed and the contract was about to be signed, have been postponed "to enable alterations in a number of detailed matters to be made."

The civil engineering companies thus feel that the latest measures which the Chancellor has taken are causing some of their clients to have second thoughts or at least to wait and see what happens in the next three months.

MOHLG

House Purchase Scheme

The scheme for very low deposits in house purchase has been simplified.

Under the new scheme a house purchaser can obtain a 95 per cent. advance on a £2,500 house built after 1918. Previously a 95 per cent. loan was limited to post-1918 houses worth £2,000.

Advances for pre-1919 houses are limited to 90 per cent. on a £2,500 house.

The minimum normal advance by the building society above which the guarantee operates will be governed by a sliding scale and will depend upon the amount of the deposit made by the purchaser. It will have the advantage that a purchaser wishing to borrow less than the full 95 per cent. or 90 per cent. will now be able to do so.

The local authority's guarantee will end when the principal outstanding falls to 50 per cent. of the purchase price or valuation, whichever is the lower.

The maximum rate of interest permissible will be that being charged by the society at the date of the advance in the normal course of business on advances to owner occupiers.



Four members of the Russian team which is at present in this country, studying architecture and building methods. Bottom right: I. I. Loveiko, Moscow's chief architect. On his left is V. A. Kucherenko, deputy chairman of the Council of Ministers and chairman of the State Committee for Construction Affairs. The Committee's chief adviser, N. P. Dudorov, is seen to his left. Professor S. S. Davydov, top right in the picture, which was taken at the Building Centre, is vice-president of the Academy of Architecture.

THE ARCHITECTS OF TEES-SIDE

The Tees-side Branch is a proud and rather independent section of the Northern Architectural Association. It has a membership—including associates—of about 100, *with, in addition, about* 60 *student members. In the following article we say a word or two about the principals of* 22 *architects' offices on Tees-side and illustrate some of their post-war work. Virtually all the major offices have been included, so it is probably fair to say that the work shown is representative of a typical cross-section through the profession. The area covered by the Tees-side Branch is wholly north of the River Tees, save for Middlesbrough and its neighbourhood, but stops short of Durham. It is a point of slight irritation that a recent change in boundaries between the NAA and the York and East Yorkshire Society has resulted in architects who geographically belong to Tees-side being transferred to the Yorkshire Society, because of the fact of their living south of the Tees in Yorkshire. They have to cross the Cleveland hills and the North Riding, of course, to attend meetings in York. The principal towns in the Tees-side area are Darlington, Stockton, Bishop Auckland, West Hartlepool, the New Town of Aycliffe and Middlesbrough. Darlington and Stockton bring to mind England's first railway line, and the early steam engines used stand before an ever admiring public on Darlington station platform. Darlington is an industrial town, of course; most of the steel window sections are rolled there, the railway marshalling yards add to the smoke and noise, and Patons and Baldwins, with a £6m. wool factory, are probably the largest of several other industries in this area. Nevertheless, Darlington is maligned if it is thought of as a sordid industrial town. Creeping up and down a number of small hills, with the town centre sliding sideways down a slope and a skyline dominated by three stacks and two cooling towers and a clock tower, it is full of variety and a certain bustling cheerfulness. Stockton boasts the widest high street in England, of course, and all the interest of a rather decaying river front close to it. Bishop Auckland is a flourishing market town with attractive Georgian houses in a market square; Aycliffe is new and shining with goodness, and only West Hartlepool, so sorely split by railway lines, and Middlesbrough, live up to expectation as the industrial north. The Tees above Stockton is a most lovely river and the country around as attractive as any in northern England. Nearby, to the south of the Tees, are the bleak but fascinating Cleveland hills, and to the east the wind-swept sea coast, all fair enough save for sordid Middlesbrough, with its tough ironmaster district where even the local authority has no say and where the ironmasters are reputed to be a law unto themselves.*

Largely in and around these towns live and work the architects of Tees-side. The Branch is a lively one—so go-ahead, in fact, that they are able to boast as good, or better, attendances at some of their general meetings than Newcastle, the headquarters of the NAA, can obtain with a membership more than twice the size. But then Tees-side takes care to pick some very good speakers. Hope Bagenal, for instance, Richard Sheppard, and Frank Yerbury, to name some recent visitors. Unexpectedly, the Branch gets very good support from the local authority offices. So often a local society is dominated by principals in private practice, and avoided by official architects who rarely feel that they belong to an area. This is not the case on Tees-side. The present secretary is Vinton Hall, the deputy borough architect of Darlington (see photograph, overleaf), and the chairman and vice-chairman for 1954-55 *were P. R. Middleton, until recently schools architect for Middlesbrough, and E. A. Tornbohm, borough architect of Darlington, respectively.*

One of the complaints of the Tees-side Branch concerns the administration of the NAA. The association consists of two branches, Tees-side and Cumberland, with the officers of the NAA handling local events, as well as Association events, at Newcastle. This odd arrangement means that when the chairmen and representatives of branches attend NAA council meetings, having thoroughly discussed issues beforehand, and arrived at a decision, they have to sit and listen while the subject is argued over by Newcastle council members, perhaps for the first time. The logical solution—as adopted by some other allied societies—would seem to be to form a Newcastle branch, and make the council of the NAA independent of branch affairs and the senior executive body.

During the war, the Tees-side Branch was virtually non-existent. Its subsequent recovery was due to the hard work of two women. One was Miss Mabel Thompson, who was secretary until she retired through ill-health. The other was the present treasurer, Mrs. Mary Nattrass, shown below. Mrs. Nattrass trained at the AA before the war and also studied for three years at the Slade. She also did social work before the war for two years as secretary of the Personal Service League.



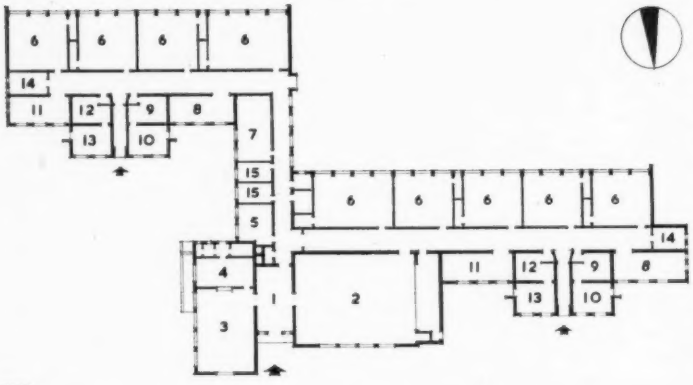
Married, with two young children, she does not practice, but she organizes student competitions, measures-up historic buildings and helps to run the Branch. It was without doubt a true comment when an architect said: "The Branch would not exist but for Molly Nattrass."





ERIC TORNBOHM

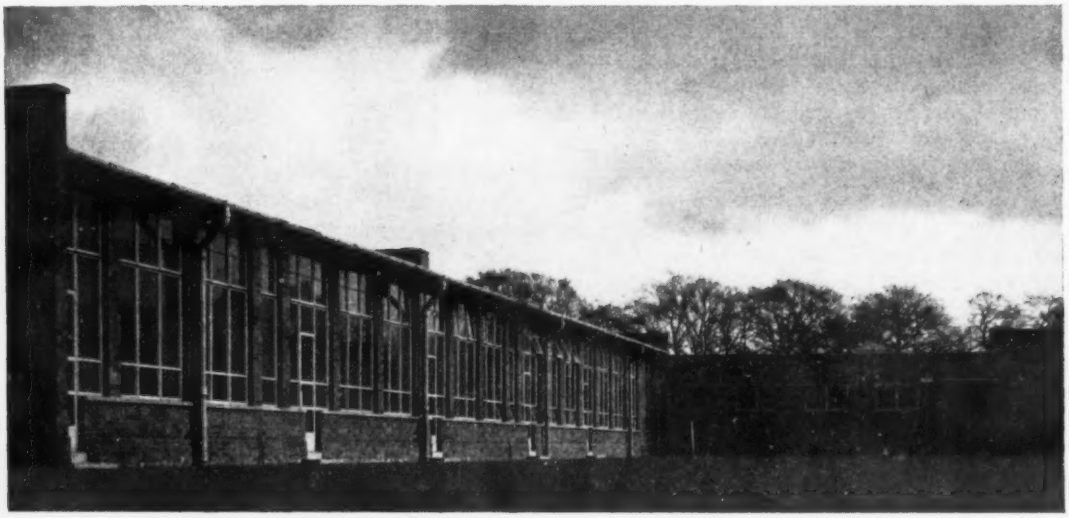
BOROUGH ARCHITECT, DARLINGTON



KEY

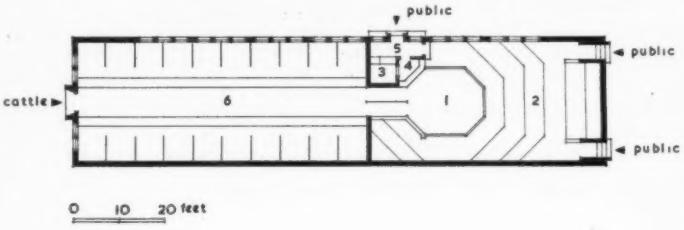
1. Entrance hall
2. Assembly hall
3. Dining room
4. Scullery
5. Head teacher's room
6. Classrooms
7. Staff room
8. Boys' cloaks
9. Boys' lavatory
10. Boys' w.c.'s.
11. Girls' cloaks
12. Girls' lavatory
13. Girls' w.c.'s.
14. Drying room
15. Staff lavatory

Eric Tornbohm, above left, the Borough Architect of Darlington, has a staff of nine assistant architects, three unqualified assistants, two of whom are pupils, and four quantity surveyors. His post-war programme has included three primary schools, one open-air school, one secondary grammar girls' school and a housing programme now running at 350 houses a year. He trained by being articled with private architects in Sunderland, but most of his life he has been in public offices: the East Riding CC, Sunderland CB, Durham CC, Carlisle, and, his own place in the south, Harrow UDC. A typical school, the Springfield County Primary School, is shown below. It is a two-form entry junior school, and as can be seen from the plan, left, the corridors have been fully developed on both sides. The construction has been detailed, the architect states, to ensure the minimum of maintenance costs. The assistant architect in charge was W. D. Porter. The Haughton housing estate, top, next page, consists of 800 houses and flats of traditional construction. Provision has been made on the estate for schools, churches and playing fields. The assistant architect was C. V. Lightowlers. A rather more unusual architectural problem which the department had to design was a new byre and sale ring for the cattle market. It has been built for the sale of attested cattle, which have to be kept segregated from the common







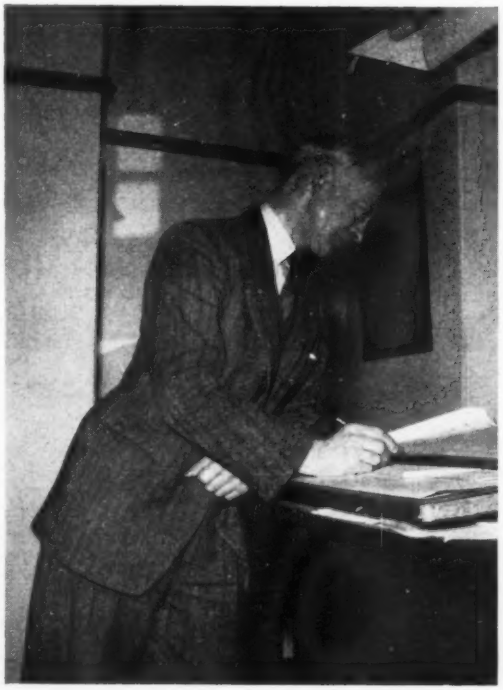


KEY

1. Sale ring
2. Public space
3. Clerk
4. Auctioneer
5. Public space (accounting, etc.)
6. Attested cattle byre with stalls for 40 beasts



herd. As can be seen from the plan, above, there is space for 40 beasts, and a terraced public space for 250 prospective buyers. (Photograph on the right). Assistant Architect, W. D. Porter. The deputy borough architect is Vinton Hall, shown top right, previous page.



JOSHUA CLAYTON & DEAS

ARCHITECT IN PRIVATE PRACTICE IN DARLINGTON

T. V. Deas is a Scot who trained at the Glasgow school. He came to Darlington in 1930, " when things got quiet " and became an assistant in Clayton's office. He became a partner in 1938, and took over the practice in 1948, when Clayton died. He has two pupils and one junior assistant, and takes off his own quantities himself. His office is in the centre of the town, close by the tall town clock, from which, he pointed out, he gets " free time." He is a past chairman of the Tees-side Chapter, and is on the executive committee. The perspective below is of a proposed methodist church and manse at Newton Aycliffe, which will be built in phases, commencing with three small rooms for meetings. These







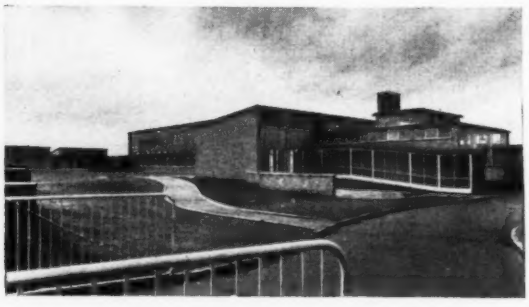
will have movable partitions, enabling them to be used as one for church services. Eventually the church will seat 300, and a hall will seat 250. Walls will be of golden brown brick, and the roof red, sand faced tiles. Cost: £45,000. His practice includes a number of private houses. The example, above left, at Bishop Auckland, is larger and rather more expensive than architects in the south, at any rate, have been accustomed to since the war. It has five bedrooms, two bathrooms and three living rooms, and is centrally heated. Construction is traditional. The small house, above right, is at Heighington, and consists of two bedrooms, and a combined dining-living room. Cost: £2,650.

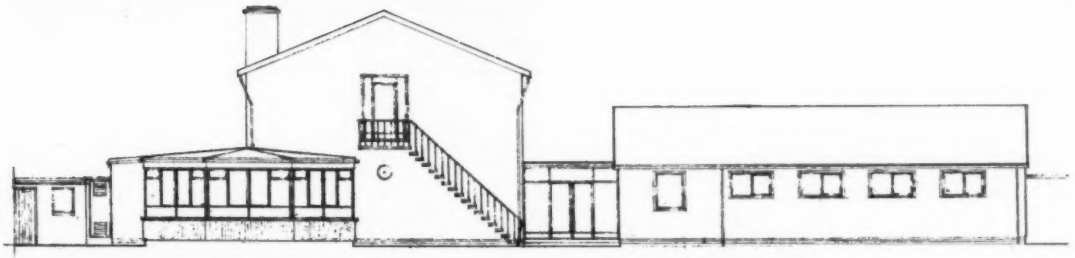


RICHARD BROWN

ARCHITECT IN PRIVATE PRACTICE IN DARLINGTON
and MEMBER OF THE GRENFELL BAINES GROUP

Richard Brown established his office in Darlington in 1952. From 1948, until then, he had been an assistant in the Grenfell Baines Group. Brown qualified by going to King's College, Newcastle, in 1937. In 1940 he went into the army. After action in Europe he was awarded the M.C. In '45 he went back for two years to the Newcastle school, to qualify, and followed this with another year to get a town planning degree. After a short time in Professor Allen's office he went to work for Grenfell Baines at the New Town of Newton Aycliffe. He married in 1950 and lived in one of the Corporation's new houses in the town. His wife, Pamela, is also an architect. Richard Brown is now in partnership with Grenfell Baines and Thomas Hargreaves. He has two assistants. When working with Grenfell Baines he supervised the erection of a county primary school at Newton Aycliffe, below. His principal job at the moment is a new club-house for the Darlington Railway Athletic





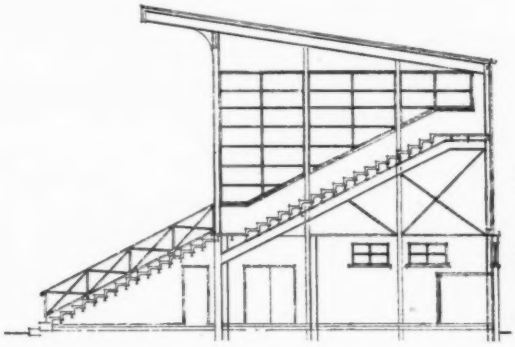
Association. This will have a bar, billiard room, and tea room. Construction: steel portal frames, timber purlins and wood wool slabs. Walls: 11-in. brickwork. A main elevation is shown above.



H. B. [RICHARDSON

ARCHITECT IN PRIVATE PRACTICE IN DARLINGTON

Harley Richardson, shown left, seated, with his junior partner, K. V. Shaw, has been in practice in Darlington since 1921. He is not, however, a native of the town, being born in Leeds and living for a time in Hull before coming to Darlington in 1905. He was articled to an uncle in Stockton in 1911. His practice is fairly small, but varied in scope. In addition to his partner there are two assistants, and two pupils. He also has the good fortune to be helped in secretarial and surveying work by his two very talented daughters. Recent work includes housing for three rural district councils, and some pub work, he has recently designed a £20,000 stand for Stockton race-course, below left, and a recreation centre of which the south and west elevations are shown, below right, for an engineering company in Darlington. It will adjoin the company's sports field and cricket ground, and consists of a main hall, 60-ft. square, changing rooms, billiard room, kitchen and bar. Construction: brick walls and piers, steel roof trusses. Cost: £13,000. The race course stand replaces an existing inadequate one. It will stand on piles 40 ft. deep, and accommodate 2,000 people. Forty tote windows will be provided, a bar, refreshment rooms and women's lavatories. Construction: steel frame; concrete steppings; ground floor, brick. Cost: £35,000. The assistant for both schemes was James C. Douglas.







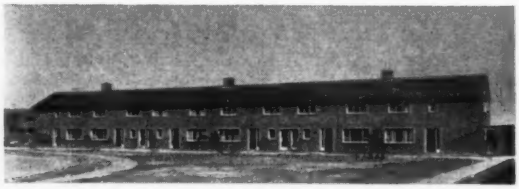
MATT. C. ROBSON & SON

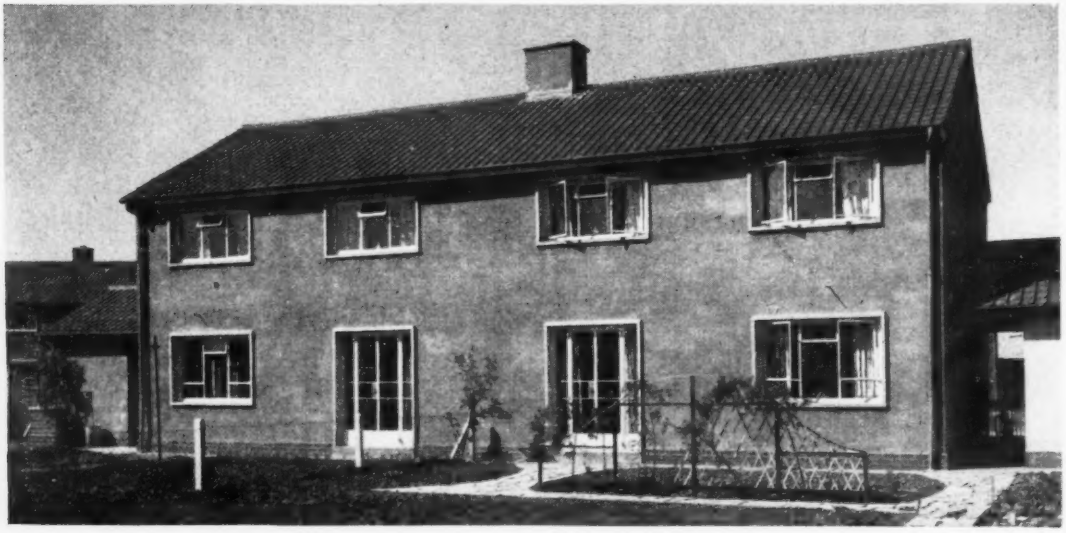
ARCHITECTS IN PRIVATE PRACTICE IN BISHOP AUCKLAND

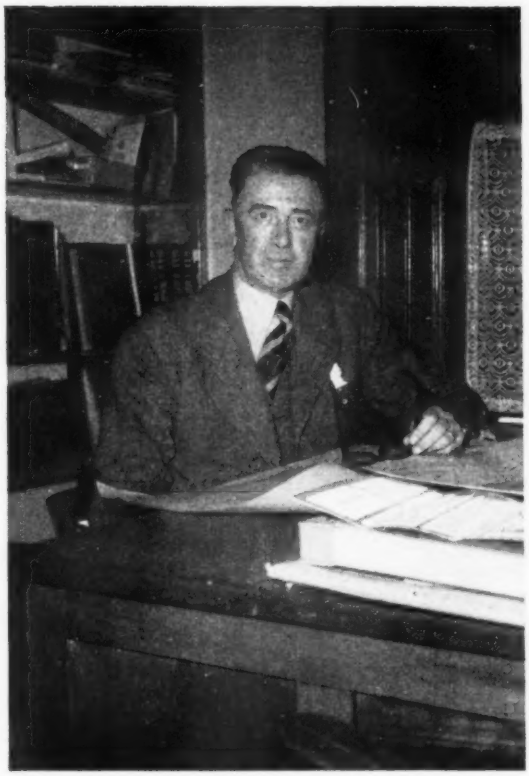


Ronald Robson joined the firm in 1926, when he was articled to his father. His father, who was chairman of the Tees-side Branch in 1932, retired in 1946. The practice is varied, with an emphasis on housing and pubs. He has completed over 300 houses for Bishop Auckland, and 188 houses and flats, below, at Newton Aycliffe. A further 390 houses for the New Town are now nearing completion. In the former scheme there were 2 three-storey blocks of 12 flats, each with a communal laundry. There were 12 different types of house. In the latter scheme there are 10 types. The density is 14 houses to the acre. Mr. Robson has a considerable pub practice, and a recent task was to provide a bar, lounge, dining room, ballroom, six bedrooms and a manager's flat as an extension and alteration to the Queen's Head Hotel, Bishop Auckland, above right. This job was carried out in 13 weeks. Ronald Robson's office consists of three assistants, of whom one is qualified. He has strong views on the value of the Allied Societies. He feels that the future of the profession lies more with the Allied Societies than with the R.I.B.A.









DOUGLAS CRAWFORD AND ELLIS

ARCHITECT IN PRIVATE PRACTICE IN BISHOP AUCKLAND

W. C. Ellis took over the practice of Douglas Crawford in 1946. His office is an attractive Georgian house in the wide market square in the centre of the town. He qualified as a pupil to a private architect in Mansfield, Notts., in '35, and for a time was an assistant in Eastbourne and Doncaster before returning north. During the war he was in the RE, spending four years in the Sudan, Middle East and Palestine. He has four assistants and one articled pupil. His practice is very varied, and, partly owing to the prosperity of Bishop Auckland, which is the shopping centre for many colliery villages around, he is very busy. Typical of the post-war buildings is Kello County School, below, done in association with G. R. Clayton, County Architect. This junior mixed and infants' school opened in 1952. Construction: traditional. (Assistants: A. W. Hand and E. Watson). The house at Shildon, bottom left, for a doctor, was completed in 1950. It stands on a steep slope, so that the entrance hall is midway between ground and first floors. (Assistants: M. Gatoff, J. A. Kelly). On a site between Stockton and Middlesbrough Mr. Ellis designed 8 factories (with offices) for the North Eastern Trading Estate. They are based on a standard design by Cackett, Burns Dick & Mackellar, of Newcastle. Construction: light steel lattice girders, and 11-in. brickwork. (Assistants: M. Gatoff, B. A. Rae, A. W. Hand, J. A. Kelly).









GEORGE GOLDSTRAW

CHIEF ARCHITECT, NEWTON AYCLIFFE DEVELOPMENT CORPORATION

George Goldstraw, above left, succeeded Grenfell Baines as Chief Architect of the New Town in 1949. The high standards aimed for by Baines have been more than adequately achieved by his successor, as the photographs show. The town is sited seven miles north of Darlington, on rather bleak, windswept agricultural land. The existing population was 80, the smallest population of the 14 areas designated to be New Towns. The eventual size will be 10,000, which again is the smallest size for a New Town. The Corporation has acquired a designated area of 700 acres for the town, which is 150 acres less than the original area assigned to them. With the revised ideas on density the town will have, in fact, space left over for half as many inhabitants again. The site was chosen because there existed an ordnance filling station which now forms the Aycliffe Trading Estate. The factories come under the North East Trading Estate. Over 1,800 houses and flats have been completed, and over 400 are under construction. Rather less than half the housing was designed by Goldstraw's department. The remainder has been designed by Grenfell Baines & Hargreaves of Preston; Matt. C. Robson & Son of Bishop Auckland (see page 386); Tasker & Child of Newcastle-upon-Tyne and Needham Thorpe & White of York. Thirteen shops have been completed, two schools and a public house. The first work for the proposed town centre, a group of 38 shops, was started this spring.

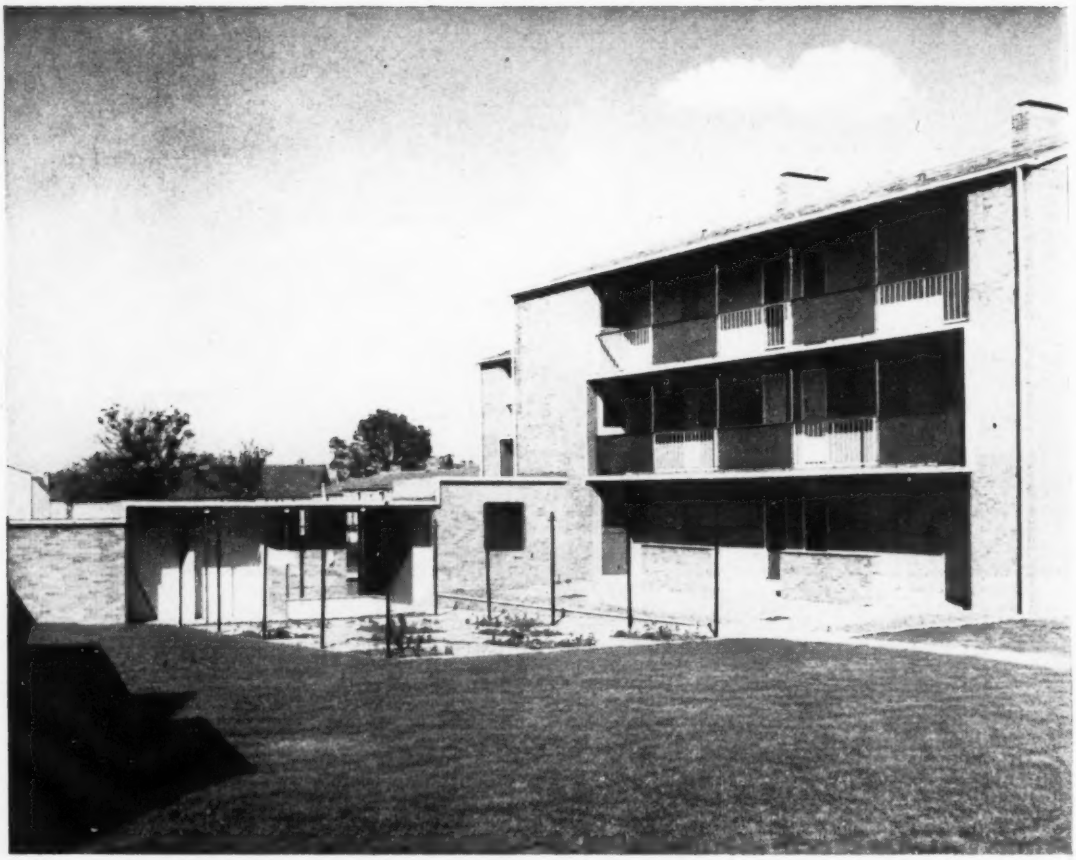
George Goldstraw trained as an articled pupil to the late H. H. Brown, of Manchester, at the Royal Technical College, Salford, and at the Manchester School under the late Professor A. C. Dickie. After qualifying he taught for a time at the Manchester School, and then, in 1929, he went to Lanchester and Lodge to act as supervising architect for the building of the palace for the Maharajah of Jodhpur. In 1945 he was appointed State Architect of Jodhpur. His present office is a small one. It is contained in an attractive single-storey office block within the New Town. The Deputy Chief Architect is Harry Durell, above right, who was once with Tecton. Durell undertakes a considerable proportion of the actual designing—the total staff consists of only four architectural assistants and four quantity surveyors—and the Tecton influence is apparent in the detailing of some of the buildings. A quick tour of the town shows a standard of design fully the equal of the majority of New Towns elsewhere, bearing in mind the rather more limited scope afforded by a town of this size. The photographs far from flatter the housing, and the town suffers, as do all New Towns, from the lack of civic buildings—a deficiency which, it is hoped, will shortly be remedied.

Opposite page, top: the layout of these prefabricated (Unity) houses is by George Goldstraw. On the left is single-storey housing designed by the Corporation. Centre: a neighbourhood shopping centre, completed in 1954 and designed by George Goldstraw (assistant-in-charge, Harry Durell). All the housing precincts have, or will have, local shopping of this sort, with main shopping at the town centre. It is unfortunate that the lack of main shops necessitates the residents having frequently to travel six miles into Darlington for essential goods. The telegraph poles in the photograph are being removed and the cables are being put underground. There are groups of garages (seen to the left) which are unattached to houses, and are lettable to anyone living in the precinct. Bottom: a considerable amount of experimental work has been tried, one of the boldest being these three-storey flats designed by Grenfell Baines & Hargreaves, and constructed on licence by the Schindler-Gohner system (brick outer-skin, and concrete inner-skin poured in prefabricated plasterboard shuttering which forms the finished internal surface). The gable is faced with concrete blocks (9 in. by 6 in. by 4½ in., self-centering), a material that has been used extensively in the new town. The block contains half 2-bedroom, and half 3-bedroom flats. The three staircases each serve two flats per floor. The sub-basement contains the following accommodation: communal workshop, nursery and playroom, wash house, drying rooms, boiler room, cycle stores and individual flat stores.









GEORGE GOLDSTRAW

CHIEF ARCHITECT, NEWTON AYCLIFFE DEVELOPMENT CORPORATION



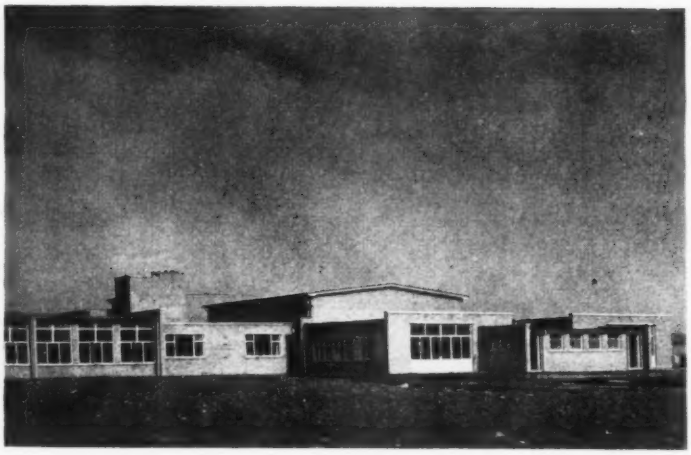


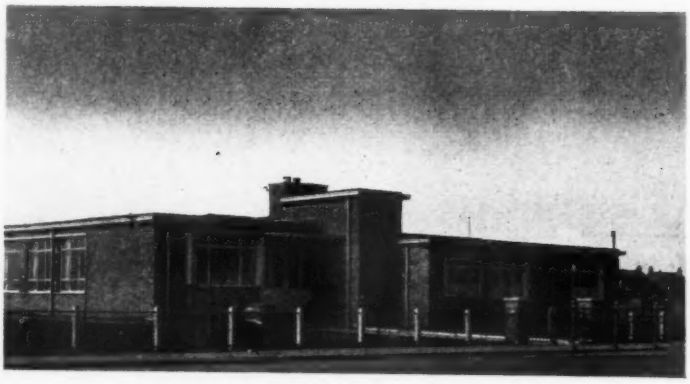


Top: a block of single person flats, with, in the foreground, a drying ground formed of alternate rectangles of flowers and gravel between paths below the clothes lines. Above and right: three views of different types of housing. Note the footpath access in the example above right.









A. G. SINCLAIR

BOROUGH ARCHITECT OF WEST HARTLEPOOL

A. G. Sinclair has a staff of six assistants of whom two are qualified, and two quantity surveyors and a deputy. He trained for a time at King's College, Newcastle, and qualified externally. He worked for a time in the Newcastle City Architect's office. His previous appointments include acting as borough architect of Stockton, and as chief architect of the Scottish Housing Association from 1949 to 1950. Since the war West Hartlepool has built over 2,000 houses and flats, and three schools. A typical block of flats is shown above. The block consists of 18 flats with internal staircase access. There are one and two-bedroom flats at the ends of the block. Construction: load-bearing brick, concrete floors, concrete tiles on timber framed roof. Cost: £23,974. On the left is one of the schools, the Rossmere primary school. It accommodates 560 infants and junior pupils, the junior section being in two storeys. Construction: load-bearing brick; roofs, felt-covered wood-wool on r.s.j.s'; floors, asphalt in corridors, thermoplastic tiles in classrooms, composition block in halls. Cost: £14,000. Another building type which the borough architect has to handle is centres for retarded children. Below left is an example, an occupational therapy centre, which has been provided to cater for 35 children and adolescents. It comprises teaching facilities with a laundry and wood-work room. Construction is similar to the school, except that corridor and workroom floors are of granolithic. Cost: £11,500.

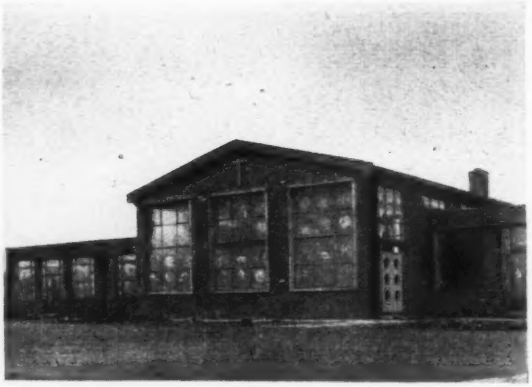


C. L. HESLOP

ARCHITECT IN PRIVATE PRACTICE IN WEST HARTLEPOOL

C. L. Heslop is a native of West Hartlepool. He was articled to a private architect and started his own practice in 1935. His first practice was hit by the slump and for a time he was out of work. He then joined another architect who eventually went to London. During the war he was on the technical staff of the War Damage Commission. He has a varied practice, a fair proportion of which is concerned with the design and improvement of working men's clubs. These clubs are particularly flourishing in the North, and their popularity has led to their being relatively very wealthy, and able to afford substantial expenditure on club buildings and equipment. Amongst C. L. Heslop's post-war work is the Roman Catholic church, below left, of St. Joseph, which, with its presbytery, was the first to be built after the war in Durham. It cost £10,000. Below right, a four-classroom Roman Catholic primary school, which replaces one destroyed by fire. The load-bearing brick walls are carried on a concrete raft to comply with the National Coal Board's requirements for protection against mining subsidence. Cost: £22,879. The Kirkham Hotel, bottom left, was a dilapidated house with a fine view across Hartlepool bay to the Cleveland Hills. Licensing restrictions prevented its being demolished and rebuilt, so the owners transferred the existing hotel licence to it and had the interior renovated. The whole front of the building was taken out and rebuilt with existing materials. Cost: £11,000. Bottom right, the Central United Working Men's Club and Institute, Hartlepool. This building replaces one destroyed in the war. The ground floor consists of a bar and billiards room, and on the first floor is a small concert hall and offices. It is proposed to extend the building by a third when the adjoining houses can be demolished. Construction: r.c. frame, floors and roof, non load-bearing brick walls. Cost £12,000.











LEONARD AUTON

ARCHITECT IN PRIVATE PRACTICE IN WEST HARTLEPOOL

Leonard Auton opened his office in West Hartlepool a little over two years ago, and consequently has no buildings sufficiently far advanced to illustrate. He trained at King's College, Newcastle, entering in 1940 and qualifying in 1950. For seven of the intervening years he was in the Indian Army. He still retains a touch of the acerbity of an I.A. officer—and of the initiative, too—witness his determination to start up a practice on his own after only two years as an assistant. He is a member of the NAA, but says that he does not attend meetings regularly. He is also a member of the TA and the Round Table. His current work includes houses, shops, garages, warehouses and an estate layout.



BELL & BELL

ARCHITECT IN PRIVATE PRACTICE IN WEST HARTLEPOOL

Edwin Charles Bell, in contrast with Leonard Auton, has been in practice for 34 years in his present *art-nouveau* panelled office. Again, like Auton, he has no work which he wishes to be published, mainly because most of his work consists of alterations. His father started the practice and trained him. He qualified first as a surveyor. During the war he worked in the borough engineer's office on civil defence work, keeping his own office alive in the evenings. He re-opened the office full-time in 1945. He is on the executive committee of the NAA.

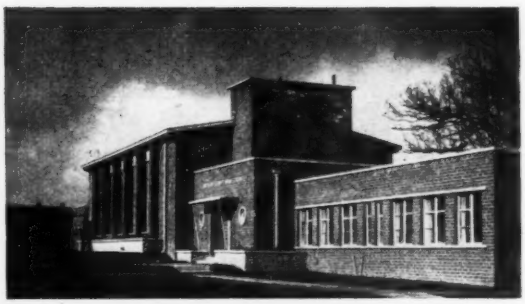


T. C. HARTLEY

BOROUGH ARCHITECT OF STOCKTON

T. C. Hartley, shown seated, with his deputy, R. W. Thompson, has been borough architect since 1950. He comes from Lancashire, having qualified externally and worked for a time in a Burnley office. He has held appointments as a senior assistant at West Bromwich and as chief assistant architect under the city engineer of Chester. He is a keen member of the NAA and a keen golfer. He plays for Durham county. His staff consists of six assistants, of whom three are qualified, four quantity surveyors, clerks of works and a direct-labour manager. Since the war Stockton has built over 3,000 houses, four schools, and a branch library. The borough is only responsible for part of the education programme. The county builds the grammar and technical schools. Below left are some old people's dwellings on the Roseworth estate. Accommodation consists of living room, bedroom, kitchen and bathroom. Construction: traditional. Cost: £1,104 each. (Architect-in-charge: R. O. Ridsdale.) Below right, a two-form entry infants' school on the Roseworth estate. Special attempts were made to preserve the small number of existing trees on the site and new planting has taken place. Cost: £37,503. Bottom, a group of six shops on the Ragworth estate. Over the shops are four 3-bedroom flats. Cost: £6,000. (Architect-in-charge: T. Vinter.)





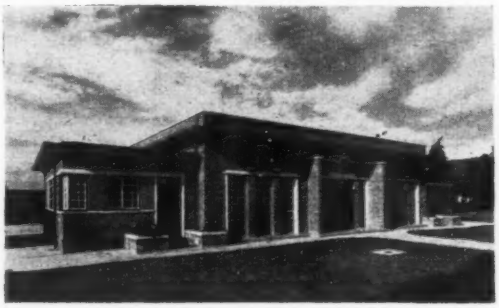


RONALD COWAN

ARCHITECT IN PRIVATE PRACTICE IN STOCKTON



Ronald Cowan was born and bred in Stockton. His father was a builder. Cowan trained at the Middlesbrough College of Art, and on qualifying went as an assistant in the borough architect's office in Dewsbury. During the war he was in the RAF for six years. On release from the RAF he started his own practice. He now has three assistants. He was the architect for the familiar Stockton test—the rehabilitation of a row of slum properties in Stockton carried out by the Allied Iron-founders. For a time Ronald Cowan was secretary of the NAA, and he did a great deal towards reviving the society after the war. He has had to give up the secretaryship, however, owing to pressure of work. Below centre and right, are before and after photographs of the alterations and improvements to the Slake Terrace Inn, at West Cornforth. Originally the inn consisted of a small public bar, snug and sitting room. Now the licensee's quarters have been moved to the first







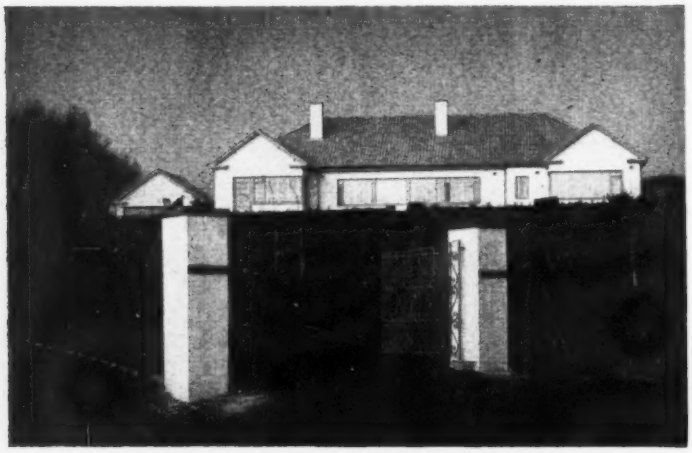
floor, and a large lounge, bar and smoke room provided. Cowan has also designed (above left) a pumping station at the Fighting Cocks reservoir, near Darlington, for the Tees Valley Water board. The building was erected in 1947 under the direction of T. S. R. Winter, the engineer and general manager of the Board. The reinforced concrete substructure was designed by Messrs. L. G. Mouchel & Partners. The accommodation provided consists of offices, workshop and cloakrooms, with all heavy machinery, pumps and mains in the basement and the motors, meters and switch-gear cabinets in the motor room at ground floor level. Construction: roof, r.c.; walls 11-in. and 16-in. brickwork; dressings, reconstructed stone; motor room floor, precast terrazzo tiles; wall linings, in-situ terrazzo.

G. P. STAINSBY

ARCHITECT IN PRIVATE PRACTICE IN STOCKTON



George Stainsby is another native of Stockton. He set up his own practice twenty-five years ago, when he won a competition for a school at Guildford. He now has four assistants. He became an associate in 1919, and for some time worked for Durham CC and for the Cooperative Wholesale Society. One of the older architects in the town, both Ronald Cowan and Matthew Trotter were his pupils. Typical of his recent work is the bungalow, overleaf, left, at Yarm-on-Tees. The





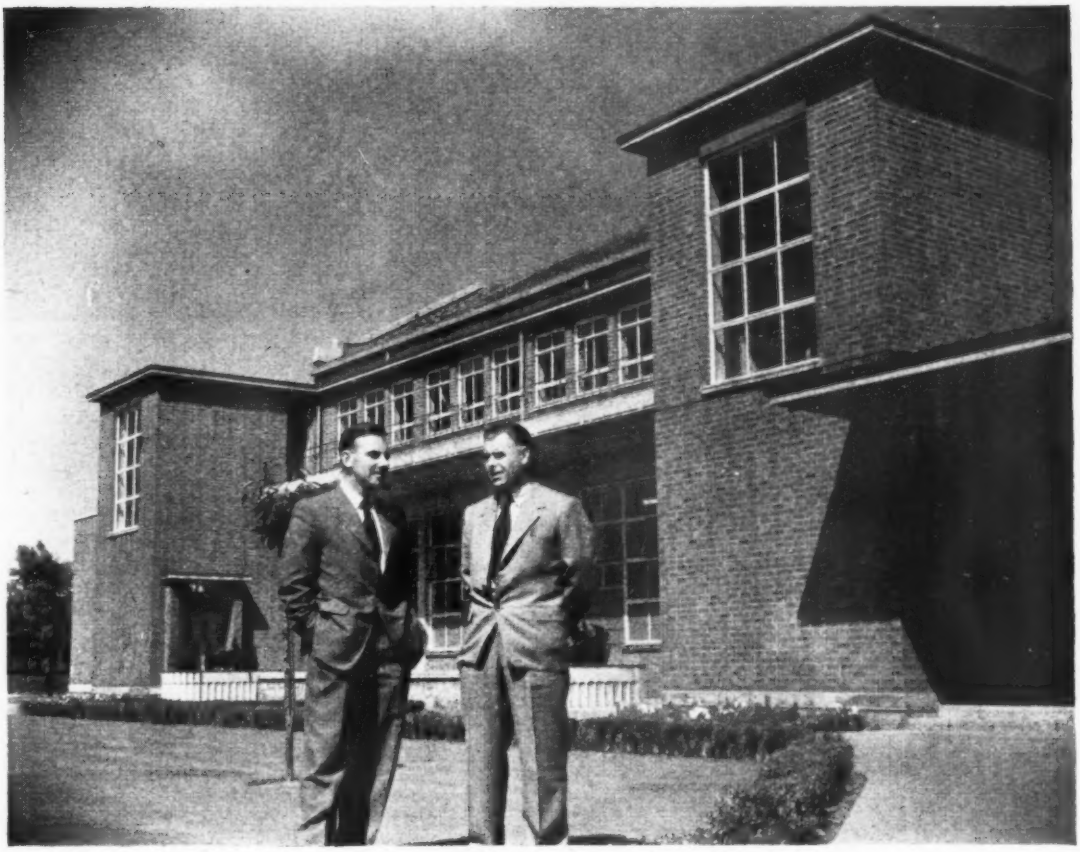
house is particularly lavishly planned and detailed by post-war standards. There are two main bedrooms, a guest bedroom, servants quarters, four bathrooms, and two living rooms. Construction: 11-in. brick walls, rendered white; roof, steel trusses, pantiles; heating, gas-fired boiler and radiators. (Assistant architect, Mary Hodgson.) Above right, a county school for 240 at West Hartlepool. The assembly hall acts as a dining room. The two classroom wings face on to a paved terrace. Construction: traditional; steel roof trusses and purlins; floors, birch wood blocks, composition blocks and thermoplastic tiles; walls plastered internally. (Assistant architect, Leslie R. Porter.)



MATTHEW TROTTER

ARCHITECT IN PRIVATE PRACTICE IN STOCKTON

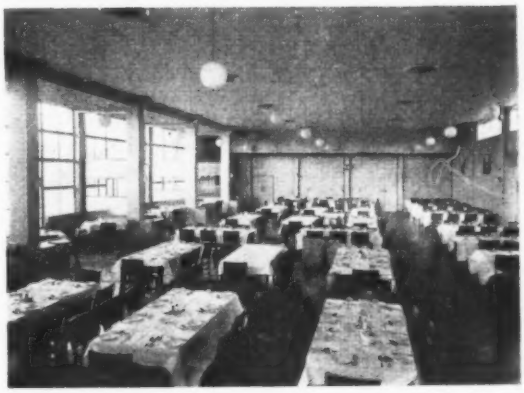
Matthew Trotter, when interviewed, said that he had no designs which he wanted illustrated, and had no desire for publicity. As the senior lecturer at the Architectural School at Middlesbrough, and a well-known architect in the area, however, he cannot be omitted in this survey of Tees-side architects. He has spent all his life on Tees-side, save for seven months with Dudok. He worked as architect to an industrial firm for many years, and only opened his present practice, in a carefully and contemporarily decorated office in the High Street, five years ago. He has four assistants.



G. FORSYTH

DIVISIONAL ARCHITECT AT ICI, BILLINGHAM





G. Forsyth has been with the ICI for over ten years. He is on the right in the photograph above, in which he is standing before the new staff dining hall in Billingham. With him is A. J. Elder, who was assistant architect on the design of the hall. A. J. Elder is now in private practice in Lincoln. G. Forsyth has a staff of eleven assistant architects and four quantity surveyors. This architectural section comes under the Billingham Division Chief Engineer's Department. The dining hall is on a restricted site, which to a certain extent dictated the planning. It is largely steel-framed, with brick cavity walling. Flat roofs are of precast concrete beams. Floors are of beech blocks in herring-bone pattern, save in the kitchens, where terrazzo tiles are used. A cafeteria, above right, is on the ground floor, and a restaurant, right, on the first floor. Overleaf, top right, the dining hall from the road. Cost: £157,235, or 4s. 10½d. per ft. cube. Overleaf, left, a research laboratory, designed to accommodate the Physical Chemistry Group of the Research Department, completed in





1949. To save steel, which was in short supply at the time, load-bearing walls with centre columns were used. The block accommodates 60 technical officers and 200 laboratory assistants. Floors are of precast concrete hollow beam construction with approximately 7-in. of foam slag screeding to cover ducts and floor drainage channels. Heating and ventilating is by a modified plenum system. Cost: £135,000, or 5*s*. 2½*d*. per ft. cube.

M. E. THORNELY

ARCHITECT AT ICI, WILTON WORKS, MIDDLESBROUGH



Michael Eric Thornely trained at the AA and qualified in 1936. He has been at the Wilton works since 1946 and has a staff of between ten to twelve assistants, of whom three or four are qualified. Much of the architectural work at Wilton would seem to consist of putting weatherproof claddings over various industrial processes. A visit to the works is impressive and frustrating. Impressive because of the vast size—350 acres have so far been covered, and another 2,000 acres remain to be developed—and because the purposes of many of the buildings are either incomprehensible to the layman or secret. An idea of the scale of development can be obtained from the photo, top opposite, of the main Power Station, only one of many impressively large structures. It supplies steam and electricity to the whole site. On the left is the control room and switch house, in the middle

·ASBESTOLUX· NON-COMBUSTIBLE ASBESTOS INSULATION BOARD: FIRE PROTECTION 1

This Sheet is one of a series on Asbestolux asbestos insulation board and, together with Sheet 36.A3, describes its use for providing specific degrees of fire protection and gives the definitions relating to the current fire regulations. A further Sheet will give details of fire tests carried out on Asbestolux and recommended methods of providing fire protection to various elements of a structure. Specific design details will also be shown in later Sheets.

British Standard Definitions

Although no material is really fireproof, i.e. unaffected by fire, different materials are affected to differing degrees: precise definitions for degrees of fire hazard and the behaviour of materials in fire are given by the British Standards Institution and employed to describe the results of official tests. The following notes have been compiled with the object of ensuring that these definitions are fully understood.

Combustible: A material is considered combustible if it adds fuel to a fire, either by producing flames, giving off combustible gas, or raising the temperature of the fire.

Non-combustible: A material which does not add fuel to a fire in any of the three ways previously described is defined as non-combustible.

Asbestolux has been tested by the J.F.R.O. in accordance with BS.476 and rated as non-combustible. In addition it will not crack or melt at high temperatures.

Spread of flame: Where it is not practicable to require a material to be entirely non-combustible, at the present time it is classified according to the tendency of its surface to spread flame. A material of very low flame spread is placed in Class 1 and those of increasing tendency in Classes 2, 3 or 4.

Fire resistance: Materials which give good results in combustibility or spread of flame tests may not necessarily do so when built into an element of a structure. The term "fire-resistance" is applied by the British Standards Institution to the performance of these elements, e.g. floor, wall, column, without regard to the individual performance of the materials of which they are composed. The fire-resistance of an element is indicated by a grading period of: ½ hr., 1 hr., 2 hr., 4 hr., 6 hr., having fulfilled the relevant test requirements.

Note: ½-in. Asbestolux casing to a stanchion protects the steelwork for 1 hour 40 minutes, thus gaining an official 1 hour grading for the column structure. Methods for determining the specific fire resistance of elements of a structure in terms of a grading are defined in BS. 476 and are described on the reverse of this Sheet.

Byelaw Requirements

Several of the Byelaws relate to the degree of fire resistance required by various elements of a structure according to the type of building. The accepted degree of fire resistance of a number of—though not necessarily all—common forms of construction is listed in the fourth schedule of the Model Byelaws (Series 4, 1953). In the Model Byelaws (page 26) it states: *The Byelaw is satisfied if the construction is in accordance with the fourth schedule. If the construction is not in accordance, then the fire resistance of the structure must be shown to be adequate by reference to a test on a similar form of construction in accordance with BS.*476.

Interpretation of the wording and intention of the new Model Byelaws is indicated in the following extract from the memorandum on Page 5: *The new Byelaws are specifically designed to allow the utmost possible freedom in building methods, provided that functional requirements are satisfied. The fact that a material or method of construction is not mentioned in no way means that it is not allowed.*

The memorandum goes on to direct that nothing, therefore, should be done to prevent the accumulation of experience to enable the proper exploitation of new constructional methods.

The use of Asbestolux as a means of providing fire protection to an element of a structure is *not* covered in the fourth schedule of the Model Byelaws, and for that reason an extensive series of J.F.R.O. fire tests have been carried out for The Cape Asbestos Company and further tests are still being carried out. It has not been practicable to make a full-scale fire test on every possible variation of construction using Asbestolux but, from the considerable test data already made available, it is possible for the J.F.R.O. to allow an "estimate of performance" to be given for constructional variations devised for this board. In this way, reference to these tests on Asbestolux will satisfy Byelaw requirements for a very wide range of constructional variations.

Copies of all J.F.R.O. fire test reports so far made for the protection of ceilings, columns, beams and walls with Asbestolux, together with recommended constructional details, are available from The Cape Asbestos Company. These recommendations will either be based on an exactly comparable test or on an estimate of performance authorised by the J.F.R.O.

Any doubt as to the interpretation of recommendations in relation to current problems, and the applicable Byelaw requirements, should be referred to the J.F.R.O. An estimate of performance is only authorised when the matter is beyond reasonable doubt. Consideration of recommendations based on a J.F.R.O. estimate of performance should take into account the fact that some of the accepted methods of construction shown in the fourth schedule have never been submitted to actual fire tests. A number of these methods listed in the fourth schedule are, therefore, themselves estimates of performance.

All recommendations made in these Sheets for using Asbestolux for fire protection will be supported by detailed methods of fixing, which are on the whole more precise than those normally indicated in traditional constructions and therefore give an equal, if not greater, safety factor than the latter.

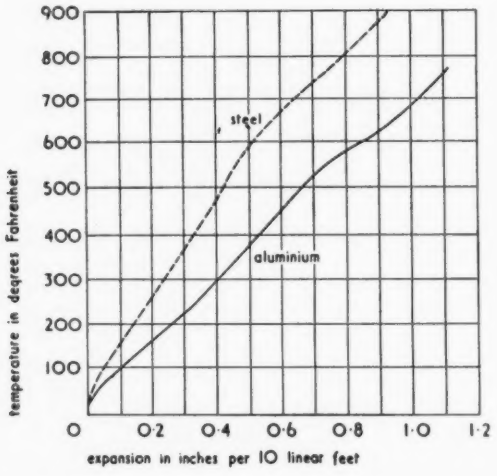
Behaviour of Asbestolux at High Temperatures

In order to make proper use of Asbestolux it is helpful to know how the material will behave in a fire. The following points should be noted:

(1) There is a tendency for sheets to bow away from the source of temperature.

36.A2 ·ASBESTOLUX· NON-COMBUSTIBLE ASBESTOS INSULATION BOARD: FIRE PROTECTION 1

(2) Some shrinkage and loss of strength occurs at high temperatures.
Observation of structures under test shows that, when freely fixed, approximately ¼ in. shrinkage will take place in a 4 ft. 0 in. length of Asbestolux during the course of the 2 hour fire test. Allowance must be made for this shrinkage and such allowance must also take into consideration movement of steelwork or aluminium. The following graph shows the approximate linear expansion of typical steel and aluminium alloys and may be compared with the standard time/temperature curve given later in this Sheet.

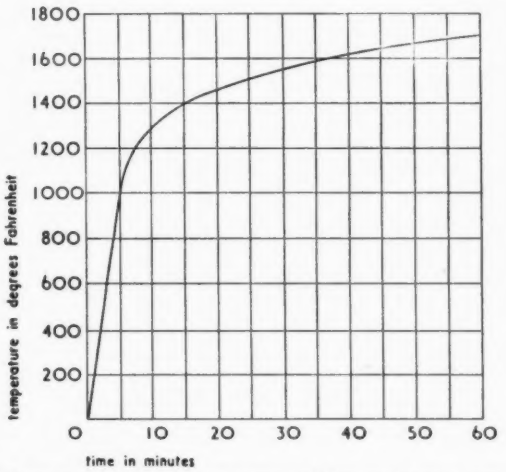


Effect of Fire on Varying Types of Structural Element

The effect of a fire on a material varies according to the type of structural element in which it is used. For example, ½-in. Asbestolux can provide two hours' fire protection to r.s.j's., whereas a similar thickness of Asbestolux used as a column casing gives only one hour forty minutes' protection (1 hour grading). This is due to the fact that a column has to withstand the effect of fire from all sides, with no consequent loss of heat, while a floor has to withstand fire from one side only. The relevant information must be sought, therefore, for the type of structural element to be protected.

J.F.R.O. fire tests: The test required to prove a specified degree of fire resistance is described in BS.476. Three conditions have to be satisfied:
(1) The integrity of the structure must be maintained.
(2) Temperature rise is limited from hot face to cold face.
(3) Flames must not pass through cracks that develop on the cold face.
The structure is tested by moving a furnace against the specimen. (The size of a test wall is generally 10 ft. 0 in. by 10 ft. 0 in.) The temperature of the furnace is controlled to reproduce the standard temperatures that occur during a fire.
The following graph shows the standard time/temperature curve (first hour):

Note: At 2, 4 and 6 hours the temperatures are 1,850° F., 2,050° F. and 2,200° F. respectively.



There are basically two types of fire resistance test:
(1) For protection of loadbearing element (e.g., a column).
(2) For fire resistance of element of a structure. (This may be non-loadbearing, e.g., a partition).
The two conditions can be combined, as for instance in the case of a partition within which stands a free loadbearing stanchion. The conditions of test vary according to the type of test. With floors and partitions it is a condition of test that, to achieve a specific grading, the average temperature rise from cold face to hot face must not increase by more than an average of 282° F. above initial room temperature. With walls and partitions, the structure might require a grading that would cover a fire occurring on one specified side or, alternatively, from either side. It is simpler and cheaper to provide a "one-way grading" than a "two-way grading."
As Asbestolux will keep its integrity for many hours during a fire, the grading of many forms of wall and partition will depend upon the limitation of temperature rise. Where Asbestolux is used on the heated side only of the partition (with a one-way fire requirement) the composition of the other skin (insulation value, thermal capacity, etc.) may have a bearing on the grading achieved.

Further Information

The manufacturer maintains a technical advisory department which is available to answer questions and advise on problems relating to this subject generally. Data sheets are available from the manufacturer showing designs for Modulux fire-resisting ceilings, specifications for lining in factories and a number of curtain-walling methods.

This Series of Sheets deals with the use of Asbestolux for providing specific degrees of fire protection. The subject is introduced by the two Sheets 36.A2 and 36.A3 which should be read in close conjunction with each other and with the remainder of the series.

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FIRE PROTECTION | GENERAL DATA

The Architects' Journal Library of Information Sheets 538. Editor: Cotterell Butler, A.R.I.B.A.



½" Asbestolux below Asbestolux-encased beam: 4 hour grading

½" Asbestolux with 1" Rocksil mat: 4 hour grading

½" Asbestolux: 2 hour grading

⅜" Asbestolux: 1 hour grading

¼" Asbestolux: ½ hour grading

STEEL R.S.J.s.



½" Asbestolux with Rocksil mat: 1 hour grading

⅜" or ¼" Asbestolux ½ hour grading

TIMBER JOISTS.

2 skins ⅜" Asbestolux: 2 hour grading

1 skin ½" Asbestolux: 1 hour grading

1 skin ⅜" or ¼" Asbestos: ½" hour grading

STEEL COLUMNS.

DIAGRAMS SHOWING DEGREF OF PROTECTION GIVEN BY ASBESTOLUX.



steel frame with 2 skins ½" Asbestolux: 2 hour grading (each way)

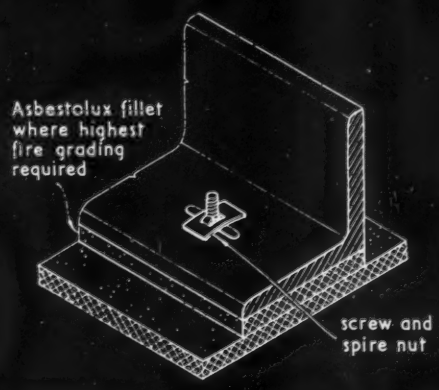


steel frame with 1 skin ¼" Asbestolux: ½ hour grading (one way)

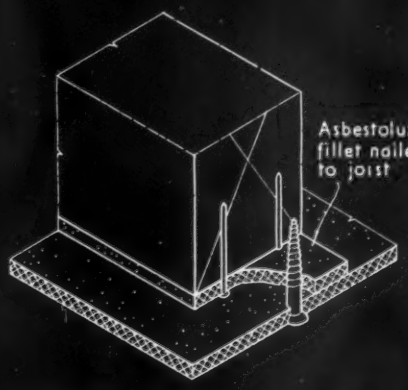


timber frame with 2 skins ¼" Asbestolux: ½ hour grading

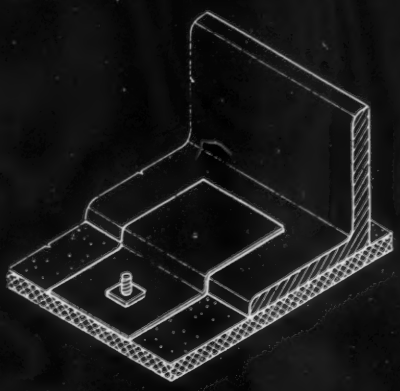
PARTITIONS.



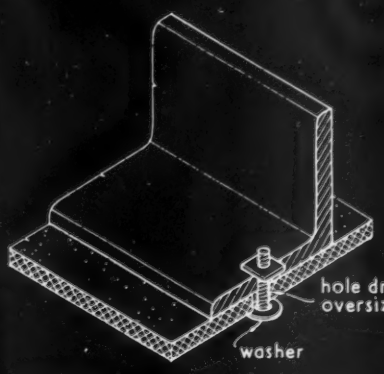
slotted fixing



FIXING TO TIMBER

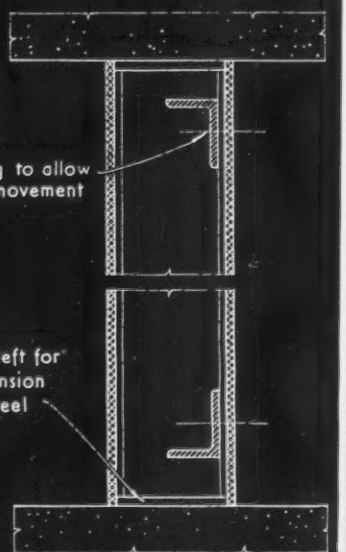


clip fixing



bolt fixing

FIXING TO STEELWORK



ERECTION OF SUPPORTING STEELWORK.

·ASBESTOLUX· NON-COMBUSTIBLE ASBESTOS INSULATION BOARD: FIRE PROTECTION 2.

Manufacturer: The Cape Asbestos Co. Ltd.

36.A3 ·ASBESTOLUX· NON-COMBUSTIBLE ASBESTOS INSULATION BOARD: FIRE PROTECTION 2

This Sheet is one of a series on Asbestolux insulation board and, together with Sheet 36.A2, describes its use for providing specific degrees of fire protection. Sheet 36.A2 also gives the definitions relating to the current fire regulations. A further Sheet will give details of fire tests carried out on Asbestolux insulation board and recommended methods of providing fire protection to various elements of a structure. Specific design details will also be shown in later Sheets.

Degree of Protection Given by Asbestolux

The diagrams at the top of the Sheet illustrate various constructions showing gradings obtained either from tests or "estimates of performance." Where ¼ in. thickness is shown as minimum, ⅜ in. is generally preferred in practice.

Floor design: The fire rating of the type of floor supported by the joists is, of course, important, especially with ratings of three hours and over (e.g. as shown in the diagram of an encased beam). It is also an important design consideration. If the fire protection of the floor is obtained by using encased beams with a non-fire-resisting ceiling suspended below, then the floor will require to possess the same fire resistance as the encased beam. If, however, protection is obtained by a continuous fire-resisting ceiling, the floor would not normally need to possess a high degree of resistance to fire. Many precast floor slabs possess a maximum fire resistance of one hour; thus in multi-storey buildings where two-hour fire resistance is required, the use of a continuous fire-resisting ceiling makes possible the use of this type of precast floor slab.

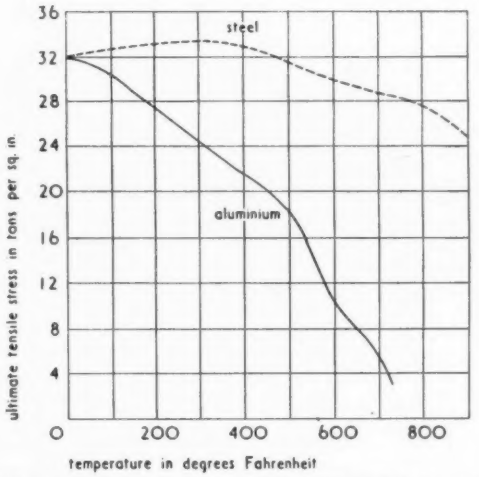
Fixing Details

Design details for Modulux fixings will be given in later Sheets. Reference may also be made to Modulux design data sheets and to J.F.R.O. test reports, both of which are available from The Cape Asbestos Company. The following principles should be adhered to when detailing for the use of Asbestolux to give a specific degree of fire protection.

Sizes of sheets: If sheets are to be held positively with little room for the Asbestolux to move, the size of sheet should be limited to a maximum dimension of 6 ft. 0 in. in any direction where an extended degree of protection is required. Where the method of fixing permits "play" in all directions, this limitation of size need not be imposed, as, for example, where panels are held in some form of rebate or where the rigidity of the sheet is obtained with washers that would melt quickly in a fire.

Fixing to steelwork (or aluminium): Allowance must be made for the movement of materials: see notes on the shrinkage of Asbestolux and the linear expansion curves for steel and aluminium on Sheet 36.A2. Three alternatives for fixing Asbestolux to steelwork are shown in the drawings on the lower face of the Sheet. The first shows a slotted fixing with screw and spire nut: the same result can be obtained with a nut and bolt. The slot permits movement of the steelwork. The second alternative shows the hole in the Asbestolux drilled over-size for the screw or bolt, which is provided with a washer under the head. The third drawing shows a sliding fixing obtained by using a Modulux fixing clip, which permits unrestricted movement of the steelwork.

Erection of supporting steelwork (or aluminium): The correct method shows an expansion gap left between the supporting steelwork and the main structure: where no gap is left, the steelwork will buckle during a fire and disrupt the Asbestolux lining. From the graph below it will be seen that structural aluminium will fail under load at approximately half the temperature at which steel would be affected.



Fixing to timber: An intermediate fillet of Asbestolux should be nailed to the underside of the joist. This prevents the weakening of the screw fixing which would occur should the screws become red-hot and char the timber.

Where tongued and grooved boarding is used over timber joists, lateral joints in the Asbestolux panels beneath the joists should have cover fillets behind them to prevent penetration of flames and smoke to upper floor. Alternatively, sheets of ¼-in. Asbestolux can be laid over the top of the joist directly under the tongued and grooved boarding.

Cavity construction: Cavity walls tend to act as flues during a fire: the use of Asbestolux fire-stops at suitable intervals is recommended to obviate this danger.

Further Information

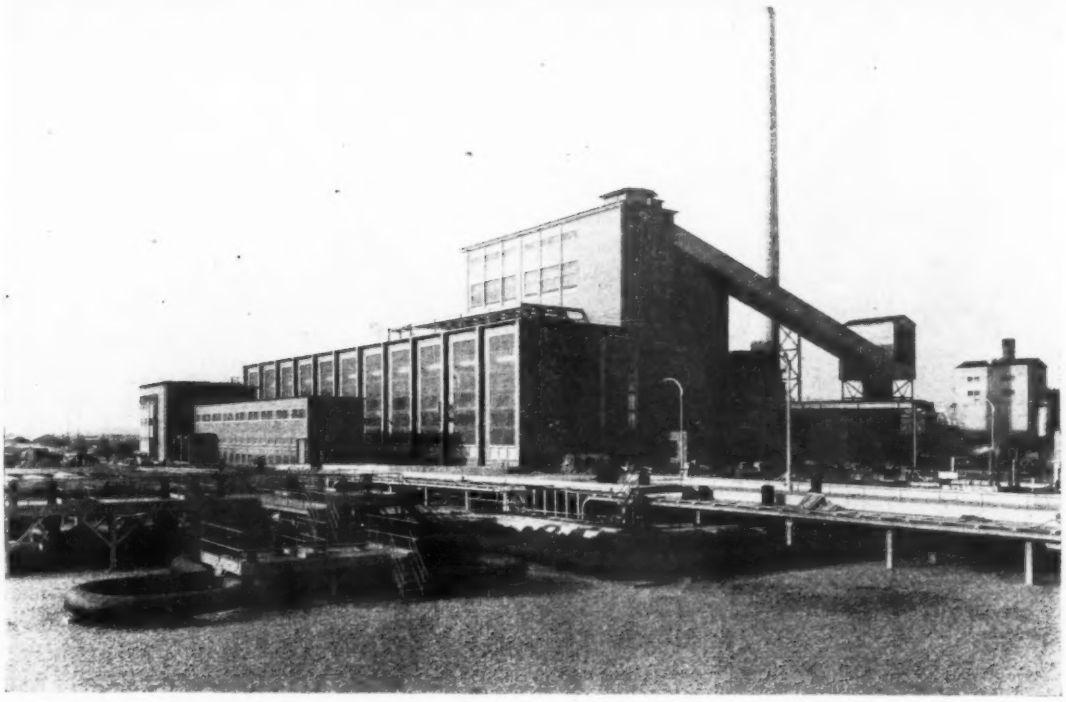
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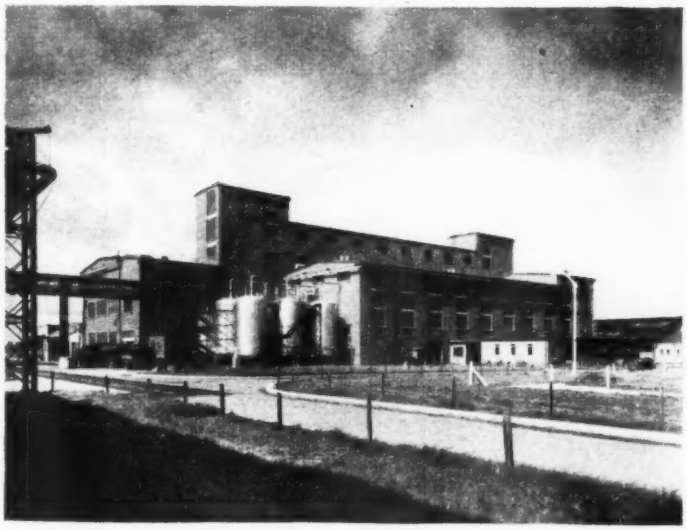
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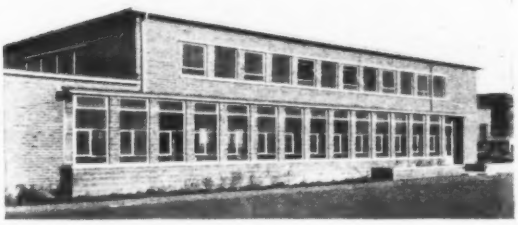
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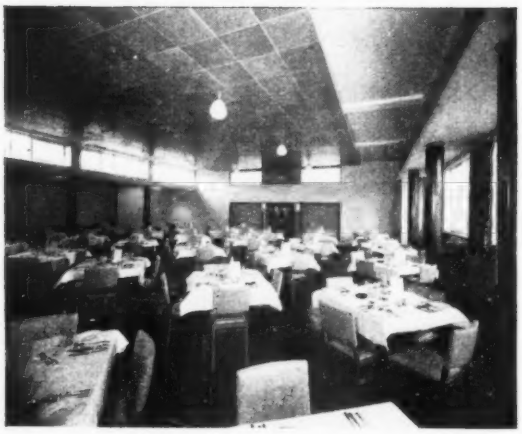
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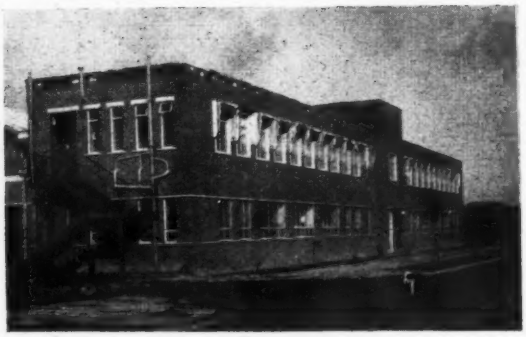




section are the turbines, and in the highest section, two boilers. A third is being added. Construction: steel frame, clad with 9-in. brick walls faced with smooth red engineering bricks. The windows are lead-covered steel patent glazing. The export steam main can be seen in the foreground emerging from under a road. Above left, is the P.F. resin and powder plant. Construction is similar to the power station. At the eaves are runway beams from which a bosun's chair is slung for window cleaning. In the foreground is an amenities building. Centre right, the main entrance of a block of offices accommodating 300. It is steel-framed, with precast concrete floors, and designed on a 12-ft. 4-in. grid. Part of the entrance elevation is faced with green-blue faience tiles. Above right, a new sub-canteen. Left, the interior of one of the staff dining rooms. The floor is wood block, with heating panels under. The ceiling is of perforated hardboard. All these buildings have been designed by the company's own engineering and architectural staff.



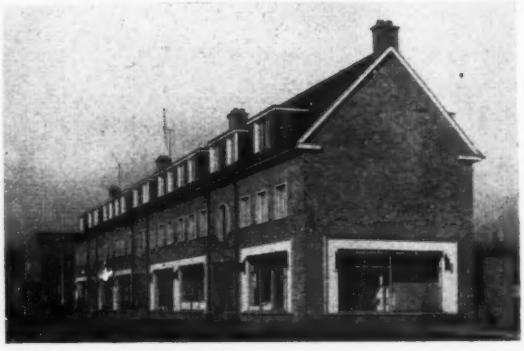




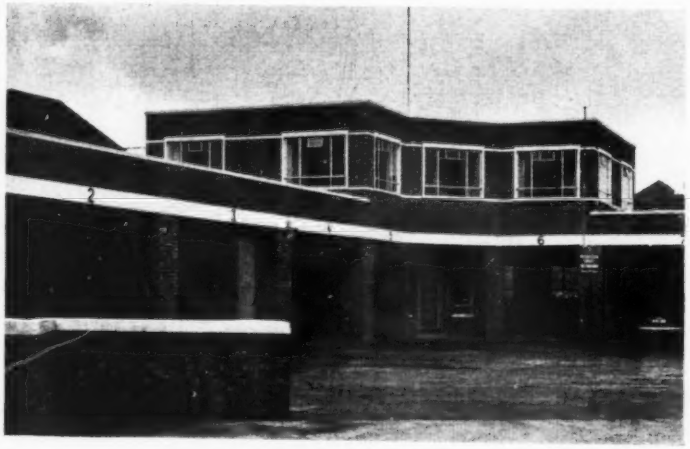
GARBUTT, ARCHIBALD & ARCHIBALD

ARCHITECTS IN PRIVATE PRACTICE IN MIDDLESBROUGH

R. M. Archibald, right, in photograph above, trained at the Liverpool school under Professor Reilly. He qualified in 1933. He has a brother who trained at the AA. H. C. Garbutt is a Middlesbrough man who trained as an articled pupil. Both partners are members of the N.A.A. Recent work includes, above, a single-storey admission block and out-patients department for St. Luke's Hospital, Middlesbrough. Construction: brick; prestressed concrete roof beams; floors, linoleum or terrazzo. Cost: £55,000. Above, right, a factory and office block for the North East Trading Estate, at Skelton-in-Cleveland. Cost: £46,000. Right, shops and flats at Guisborough. Construction: largely traditional. Cost: £22,908.











T. A. CRAWFORD

ARCHITECT IN PRIVATE PRACTICE IN MIDDLESBROUGH

Thomas A. Crawford started his practice in 1952. He trained as an articled pupil to a Newcastle architect. His office consists of two assistants and his son, who is training to be an architect. Recent work includes, above, an ambulance station in Middlesbrough consisting of garage, radio room, crew rooms, offices and stores. Construction: load-bearing walls, prestressed concrete roof. Top right, a combined church and church hall at Berwick Hills estate, built in the Orlit system. Cost: £16,000, approximately. Above right, a Roman Catholic junior and infants school in Middlesbrough, the first to be erected after the war. It accommodates 560 pupils. Construction: load-bearing walls, partial steel frame. Cost: £96,000. Below, left, a house in Middlesbrough with 1,800 sq. ft. floor area, built at a cost of £3,000 excluding the cost of land.







NORMAN BEST

DEPUTY ARCHITECT UNDER J. A. KENYON,
BOROUGH ENGINEER AND SURVEYOR, MIDDLESBROUGH

Norman Best is responsible for the design of Middlesbrough's post-war housing. Over 5,000 hou $_{e}^{s}$ have been completed since the war. Born in Durham, he trained as an articled pupil, qualified in 1931, and afterwards went to the City Architect's office, Sheffield. He came to Middlesbrough in 1946. He teaches at the technical college, and therefore has little time for NAA activities. Typical of his work is the housing left and below. The former has a working kitchen, utility room, and three bedrooms sleeping four (Cost: £1,330)





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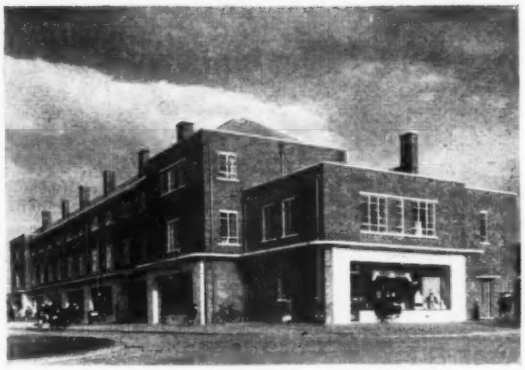
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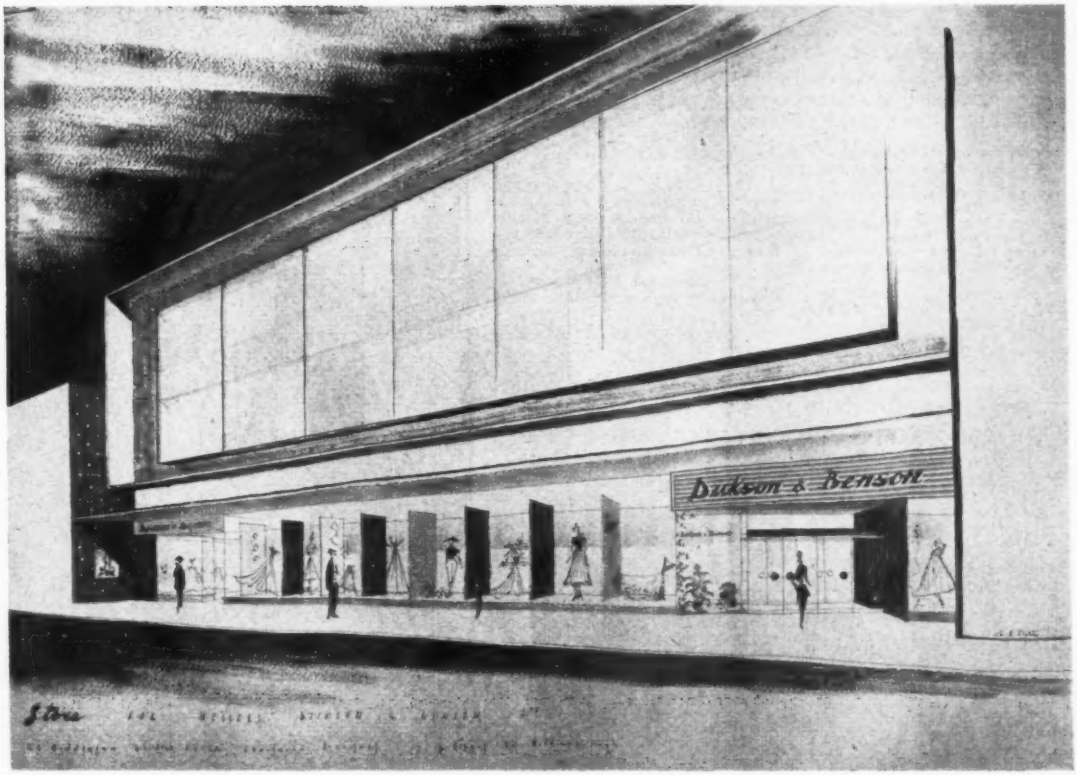
and the latter is for five people and has a washhouse and outside w.c. and store. (Cost: £1,475). Left, a block of nine shops, seven maisonettes and two flats at Thorntree. Each shop has a lock-up garage. (Cost: £30,000). The heavy pollution in the area encourages the use of traditional materials—mainly local facing bricks and clay tiles.



P. R. MIDDLETON

ARCHITECT IN PRIVATE PRACTICE IN MIDDLESBROUGH

P. R. Middleton was, until last year, the schools architect for Middlesbrough. Since then, however, he has set up in private practice in the town, one of his first jobs being to design the department store shown in the perspective below. He was born in the West Riding and trained at the Leeds school. Then followed work with the West Riding C.C. and with Bournemouth. During the war he was in the Royal Navy and the Army Education Corps. For two years after the war he went back to Bournemouth, and then, in 1949, he moved to his Middlesbrough post. His office at the moment is small. His senior assistant is G. H. Fletcher. Two of the schools completed during P. R. Middleton's



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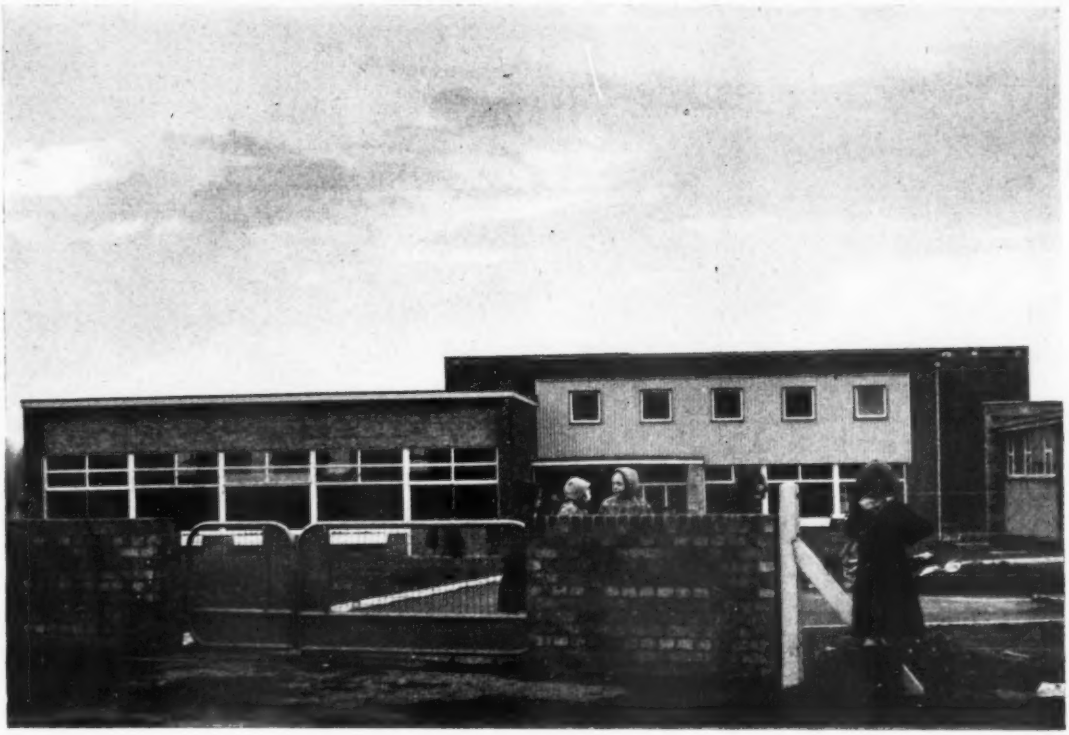
"Stotts of Oldham"

VERNON WORKS
OLDHAM

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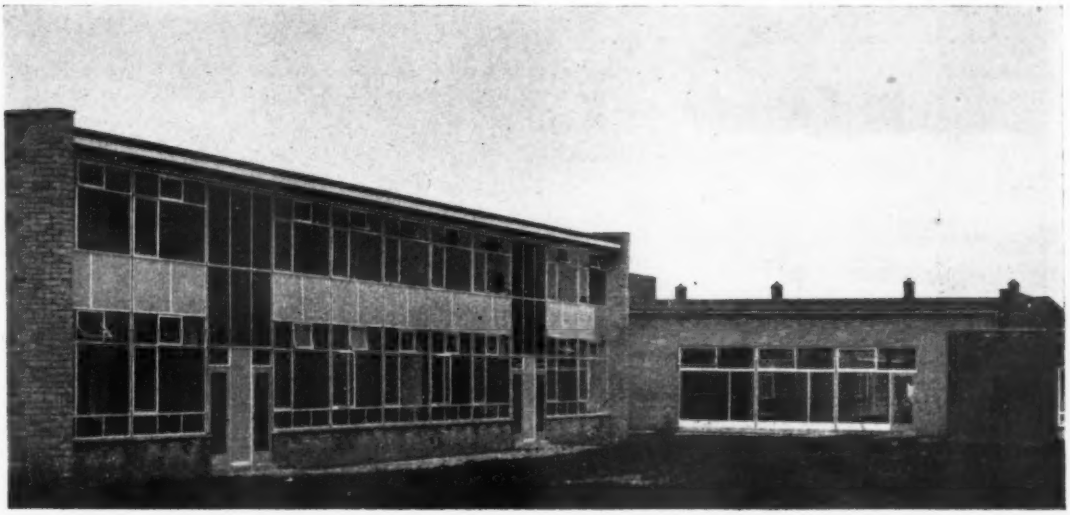
LONDON OFFICE,
167, OXFORD ST., W.1.

BIRMINGHAM + GLASGOW + BELFAST





term of office are shown here. Above, the Green Lane Primary School for 240 infants and 320 juniors. This school was in the 1952 building programme. The infants are on the ground floor, and the juniors on the first floor. Two nursery classrooms have been sited as a separate block. These are planned on two levels, and have open lavatory areas to aid supervision. The school cost £89,040, and the nursery block £9,000. Left, the caretaker's house for this school, with a floor area of 1,800 sq. ft. Cost: £2 per sq. ft. Below, the first of three primary schools for the Berwick Hills estate. It was occupied in August, 1954. The infant department is planned as a series of self-contained units of 840 sq. ft. grouped around the assembly hall and the entrance dining hall. Circulation areas have been largely eliminated, each teaching unit having its own w.c. and lavatory facilities for both sexes. Construction: cold-rolled steel frame, hand-made brick externally, stone gable ends, plastic panels in window units. Floors, cork tiles, except in corridors and lavatories where thermoplastic and unslipped red tiles are used respectively. Contract value: £84,424. Cost per place: £134 8s. 4d.











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ARCHITECTS IN PRIVATE PRACTICE IN MIDDLESBROUGH

J. Pearson Rudd, standing, with Lewis E. Wade, are partners in one of the largest firms in the area. They have a staff of six, of whom three are qualified. Mr. Rudd is a Middlesbrough man who trained by being articled to the senior, Archibald, who for a time was in partnership with the founder of the practice, Mr. Kitching. Lewis Wade was









articled to Kitching in a Darlington office in 1906, left it in 1914 and returned in 1929. The two became partners with Kitching in 1939, and Kitching retired shortly after. Four post-war buildings are: top left, an ablution centre for Acklam foundry, top right, the Royal Arms at Peterlee, the first pub in the New Town, which opened in 1954. Construction: traditional, save for special r.c. foundation to minimise damage from mining subsidence. Cost: £18,000. Above right, housing at Billingham, for the Billingham U.D.C. Left, factory, and bottom left, canteen, at Guisborough, Yorkshire. This scheme was sponsored by the North Eastern Trading Estates. The factory consists of a floor area of 29,000 sq. ft., and is an extension to an existing factory. Construction: steel frame, r.c. floors and roof, concrete piles. The canteen measures 90 ft. by 60 ft. Total cost: £60,000.



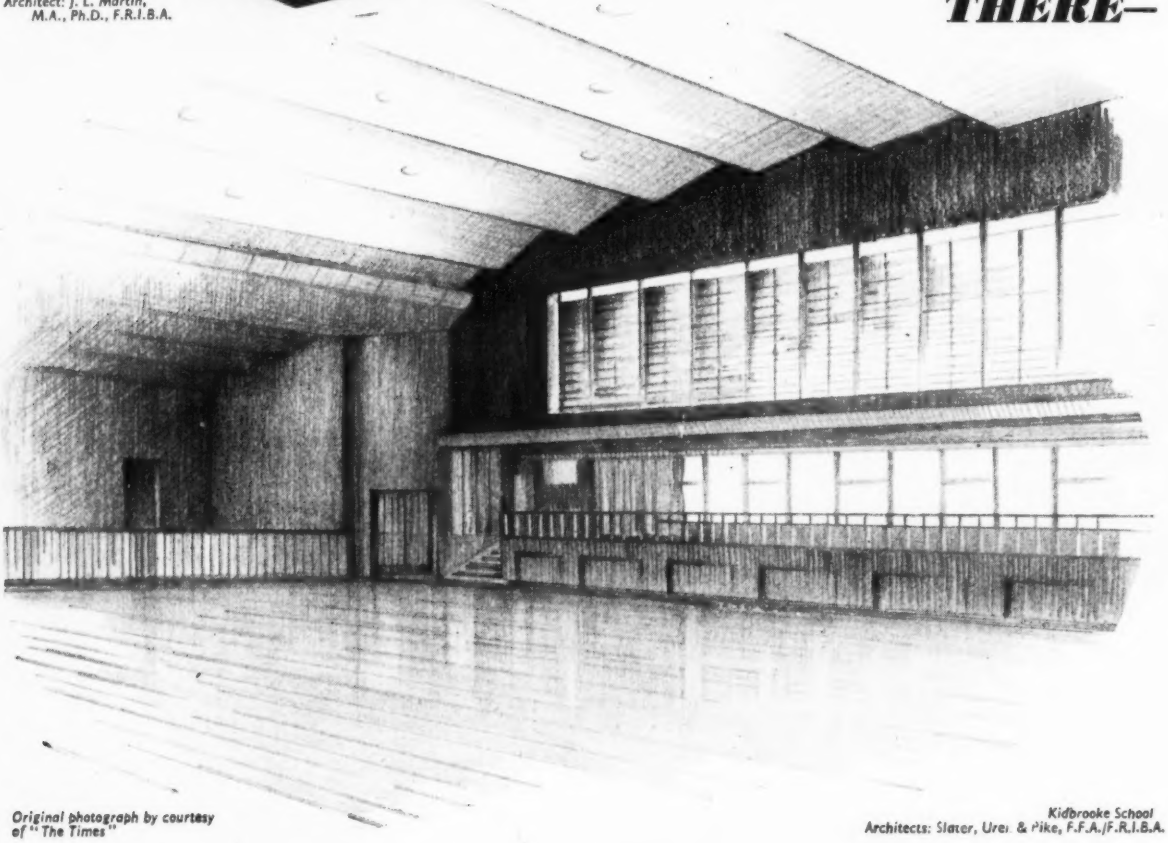
WOOD FLOORS



Catford County Secondary School
Architect: J. L. Martin, M.A., Ph.D., F.R.I.B.A.

RIGHT HERE— —

THERE—



Original photograph by courtesy of "The Times"

Kidbrooke School
Architects: Slater, Urei & Pike, F.F.A./F.R.I.B.A.

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Buildings Illustrated

Springfield County Primary School at County Durham. (Page 382.) Architect: Eric A. Tornbohm, A.R.I.B.A. Assistant Architect in charge: W. D. Porter, A.R.I.B.A. Main Contractors: Geo. Dougill & Sons Ltd., Darlington. Sub-contractors: steelwork, Durham Steelwork Co. Ltd., Team Valley Trading Estate, Low Fell, Gateshead; artificial stone, Girlingstone Ltd., Leeds; heating, The Brightside Foundry & Engineering Co. Ltd., Newcastle-on-Tyne, 2; electrical work, Doves (Darlington) Ltd., Darlington; metal windows, Morris Singer & Co., Walthamstow; floor tiling, Semtex Ltd., Middlesbrough; roofing, David Anderson & Sons, Leeds; precast units, The Trussed Concrete Steel Co. Ltd., Newcastle-on-Tyne.

Haughton Housing Estate. (Page 383.) Architect: Eric Tornbohm, A.R.I.B.A., Borough Architect. Assistant Architect: C. V. Lightowlers. Contractors: R. Blackett & Sons Ltd.; F. Shepherd & Son Ltd.; Tees-side Builders (Stockton-on-Tees) Ltd.; Geo. Dougill & Sons Ltd.; Boddy & Bell Ltd.; Edgar Lawson Ltd.; Leslie & Co. Ltd.; Darlington Corporation, Works Department. Sub-contractors: electrical, Hartley Electromotives Ltd.; plastering, J. Bolam.

Cattle Market, New Byre and Sale Ring. (Page 383.) Architect: Eric Tornbohm, A.R.I.B.A., Borough Architect. Assistant Architect: W. D. Porter, A.R.I.B.A. Contractor: Darlington Corporation Works Department.

Park Lodge, Durham Road, Bishop Auckland, for Mr. and Mrs. L. Page. (Page 384.) Architect: T. V. Deas, A.R.I.B.A. General Contractors: Edwin Pye & Son. Sub-contractors: reconstructed stone, Crossley & Sons.

Field Head, Heighington, Co. Durham, for Mr. and Mrs. J. E. N. Hayward. (Page 384.) Architect: T. V. Deas, A.R.I.B.A. General Contractor: A. Neasham. Sub-contractors: Hurworth straw thatch bricks, Crossley & Sons; coloured concrete pantiles, Marley Tile Co. Ltd.

County Primary School, Sugar Hill, Newton Aycliffe, Co. Durham, for the Durham County Council Education Committee. (Page 384.) Architects and Quantity Surveyors: G. R. Clayton, F.R.I.B.A., County Architect; G. W. Gelson, A.R.I.B.A., Deputy Architect (Education), in collaboration with Grenfell Baines & Hargreaves, A./A.R.I.B.A., A.M.T.P.I., Assistant Architects; W. White, A.R.I.B.A. (design and details); R. Brown, M.C., B.ARCH. (DUNELM), A.R.I.B.A., A.M.T.P.I. (Supervision); consultants, heating, ventilation and water services, R. W. Gregory & Partners; electrical installation, Electrical Department, Durham County Council. General Contractors: G. Stephenson Ltd. Sub-contractors: reinforced concrete (design and fabric), Ferrocon Engineering Co. Ltd.; bricks, structural steel, precast concrete, Foster Bros. Ltd.; facings, Samuel Tyzack & Co. Ltd.; tiles, Commercial Marble & Tiles Ltd.; roofing, Stramit Boards Ltd.; roofing felt, Ruberoid Co. Ltd.; partitions, metal faced plywood, Venesta Ltd.; glass, Pilkington Bros. Ltd., per Elders, Walker & Co. Ltd.; wood block flooring, J. A. Hewetson & Co. Ltd.; semastic tiles, Limmer & Trinidad Lake Asphalt Co. Ltd.; cork tiles, Cork Insulation & Asbestos Co. Ltd.; waterproofing membrane, Evode Ltd.; central heating, G. S. Akinhead & Co. Ltd.; electrical installation, R. V. Hogg & Co.; electric light fixtures, Falk, Stadelmann & Co. Ltd.; gas supply, The Northern Gas Board; plumbing, T. L. Bradley; sanitary fittings, Morrison, Ingram & Co. Ltd.; precast concrete stair treads, Samuel Tyzack & Co. Ltd.; door furniture, James Gibbons Ltd., through J. Armstrong Todd; casements, kitchen vallance, Mellowes & Co. Ltd.; roller shutters, Roller Shutters Ltd.; duct covers, Broads Manufacturing Co. Ltd.; plaster, Carlisle plasters, by S. McCullough; wallpapers, Crown Wallpapers; furniture, Mann Egerton & Co. Ltd.; cloakroom fittings, Parker, Winder & Achurch Ltd.; paint, Docker Bros. Ltd., through Edwin Turner Ltd.

Ring Stand at Stockton Race-Course, Stockton. (Page 385.) Architects: Harley Richardson & Shaw, L./A.R.I.B.A. Assistant Architect: James C. Douglas. Quantity surveyor: Frederick Iddison. Main contractor: Stephen Coates Ltd. Foundations and concrete: Trussed Concrete Steel Co. Steelwork: J. Shewell & Co.

Recreational Centre for the Cleveland Bridge and Engineering Co. Ltd., at Cleveland. (Page 385.) Architects: Harley Richardson & Shaw, L./A.R.I.B.A. Assistant Architect: James C. Douglas. Main contractor: J. W. Richardson & Sons Ltd. Roofing work: Ruberoid.

The Queen's Head, Bishop Auckland. (Page 386.) Architect: Matt. C. Robson. Assistant Architects: Robert Bowdon, A.R.I.B.A.; Leonard Oliphant. General Contractor: Snowdon Bros. Ltd. Sub-contractors: bricks, Eldon Brick Co. Ltd.; windows, The Crittall Mfg. Co. Ltd.; kitchen equipment, Stotts of Oldham; electrician, White & French Ltd.; lighting fittings, Falk, Stadelman & Co. Ltd.; paints, Camrex Paints Ltd.; faience plaques, Carter & Co. Ltd.; furniture and fittings, W. C. Thomson Ltd.

Houses and Garages at Newton Aycliffe, Co. Durham. (Page 386.) Architect: Matt. C. Robson. Assistant Architects: Robert Bowdon, A.R.I.B.A.; Leonard Oliphant. General Contractor: The Corporation Direct Labour Department. Sub-contractors: bricks, Crossleys' Ltd., London Brick Co. Ltd., Lumley Brick Co. Ltd., Blacketts' Ltd.; windows, Wood casement Windows by W. Gray Ltd., Aycliffe Trading Estate; roofing tiles, Greenwoods Tileries Ltd., Samuel Tyzack & Co. Ltd., Marley Tile Co. Ltd.; general building materials, Henry Foster & Sons Ltd.; heating appliance, Redfyre Bacboiler; sanitary fittings, Ideal Vitreous China; flooring, Accotile.

Houses and flats at Newton Aycliffe, Nr. Darlington, Co. Durham. (Page 386.) Architect: R. W. Robson, L.R.I.B.A. Assistant architects: William Ramsay, A.R.I.B.A., and Robert Bowdon, A.R.I.B.A. General contractors: The Corporation Direct Labour Department. Sub-contractors: Bricks, Crossley's Ltd., Middlesbrough; windows, The Crittall Manufacturing Co. Ltd.; flooring, Accotile & Windsor flooring; roofing, Langley's Ltd., Hardrow, and Marley Tile Co. Ltd.; kitchen furniture, Peerless, Built-in-Furniture Ltd., Perivale; paints, Dulux Leyland, Aycliffe Paints Ltd., and Parsons'; heating appliance, Ideal Neo-Fire; general building materials, Henry Foster & Sons Ltd., Bishop Auckland.

Kelloe County School, County Durham. (Page 387.) Architects: Douglas Crawford & Ellis, F.R.I.B.A., in association with G. R. Clayton, F.R.I.B.A., County Architect. Assistants: Arthur W. Hand, E. Watson. General contractors: Wright & Kellett Ltd. Sub-contractors: structural steel, James W. Ellis Ltd.; metal windows and door cills and Lavatory cubicles, Williams & Williams Ltd.; art stone, Ace Concrete Products Ltd.; floor units, Webster Davidson Ltd.; floor and wall tiling, W. Sweet Ltd.; cushioncrete, Hardwall Plasterers Ltd.; abestos decking, Universal Asbestos Manufacturing Co.; wood block flooring, Bennett Flooring Co. Ltd.; built-up roofing, Ruberoid Ltd.; hardware, N. F. Ramsay & Co. Ltd.; suspended ceilings, Sundeala Ltd.; lockers, James Gibbons Ltd.; cloak and drying room fittings, Comyn Ching; plastering, J. Bolam; plumbing, S. R. Taylor; sanitary fittings, Shaw Knight & Co. Ltd. heating, Modern Heating Co. Ltd.; electrical, Doves (Darlington) Ltd.; decorating, A. Hector Grabham Ltd.; glazing, Elders Walker Ltd.; tar paving, E. Clarkson Ltd.; gates, Wilson's Forge Ltd.; roof grillage, Precision Roofs Ltd.; tiles, Langley London Ltd.

House at Shildon, Co. Durham. (Page 387.) Architects: Douglas Crawford & Ellis, F.R.I.B.A. Assistants: M. Gatoff, J. A. Kelly. General contractors: A. Metcalfe & Sons. Sub-contractors: metal windows, Crittall Manufacturing Co. Ltd.; glass bricks, Pilkington Brothers Ltd.; built-up roofing, Ruberoid Ltd.; heating, G. Waine & Co. Ltd.; electrical, R. V. Hogg & Co; plastic cork flooring, Protheroe & Macnab; hardware, N. F. Ramsay & Co. Ltd.

Factory for North Eastern Trading Estates Ltd., Stockton-on-Tees. (Page 387.) Architects: Douglas Crawford & Ellis, F.R.I.B.A. Assistants: M. Gatoff, B. A. Rae, Arthur W. Hand, J. A. Kelly. consultants, development and civil engineering, Sir Alexander Gibb and Partners; heating, Cairns & Byles, and N. Vaux; lighting, Gregory & Partners. General contractors: G. Dougill & Sons, F. Shepherd & Sons. Sub-contractors: steel work, Tees-side Bridge & Engineering Works Ltd.; Cargo Fleet Co. Ltd.; A. G. B. Allton & Co. Ltd.; roofing, Ruberoid Ltd.; Thermocoust Ltd., Robertsons Patent Metal Ltd.; Universal Asbestos Manufacturing Co. Ltd.; asphalt and built-up roofing, Northern Asphalte Ltd., Ruberoid Ltd.; art stone, Crossley's Ltd., Kingston Concrete Ltd.; metal windows, Henry Hope & Son, Rustproof Ltd.; roof glazing, Williams & Williams Ltd.; floor and roof units, Concrete Ltd., Kingston Concrete Ltd.; floor reinforcement, Expanded Metal Ltd., Twisteel Reinforcement Ltd.; floor finishes, Semtex Ltd.; Terradura Ltd., Bells Asphalt Ltd., Accotile Ltd., Ragusa Asphalt Ltd., Val de Travers Ltd.; heating, Steel & Co. Ltd., Doves (Darlington) Ltd.; hardware, N. F. Ramsay & Co. Ltd., Parker, Winder & Achurch Ltd.; sliding door gear, E. Hillaldam Ltd.; P. C. Henderson Ltd., British Trolley Track Ltd.; sanitary fittings, Associated Clay Industries Ltd.

Housing at Newton Aycliffe, Co. Durham. (Pages 389—390.) Aycliffe Development Corporation. Chief Architect, G. A. Goldstraw, B.A., A.R.I.B.A., Deputy Architect, Harry Durell, L.R.I.B.A. (designer). Contractors: Direct Labour Department, Aycliffe Development Corporation (Manager, H. Thompson), Bell & Ridley Ltd., George Wimpey & Co. Ltd. Sub-contractors: glazing, Elders Walker & Co. Ltd., Darlington; flooring, Beaumont Pearce & Co. Ltd., Newcastle-upon-Tyne; plumber, Elsy & Gibbons, Ltd., South Shields; painter, Hector Grabham Ltd., Sunderland; electrician, Doves, Darlington; joinery, Wm. Brown's Sawmills, Darlington.

Single persons' flats: Contractor, Bell & Ridley, Ltd.. Sub-contractors: plumber, G. Waine & Co, Bishop Auckland; heating engineer, Elsy & Gibbons Ltd., South Shields; painter, Ed. Twiner, Ltd., Middlesbrough; slater, C. J. Simpson, Durham; electrician, J. E. Tregonning, Bishop Auckland.

Three-storey Flats at Argyll Road, Owton Manor Estate. (Page 391.) Architect: A. G. Sinclair, A.R.I.B.A., Borough Architect. Assistant Architect: A. W. Ayres. Main contractors: C. M. Yuill, Ltd.

Occupational Therapy Centre at Brenda Road. (Page 391.) Architect: A. G. Sinclair, A.R.I.B.A., Borough Architect. Assistant Architect, R. North. Main contractor: Lazenby Bros. Heating consultants, Cairns & Byles.

Rossmere Primary School, Owton Manor Estate. (Page 391.) Architect: A. G. Sinclair, A.R.I.B.A., Borough Architect; Assistant Architect: A. Thompson. Main contractors: Snowdon Bros. Ltd. Heating and Electrical Consultants, Cairns & Byles.

The Central United Working Men's Club & Institute Ltd., at Hartlepool. (Page 392.) Architect: C. L. Heslop, L.R.I.B.A. Assistant Architect: W. W. Marshall. Main contractors: John Proud Ltd. Sub-contractors: heating and ventilation, Heslop & Hall Ltd.; plumbing and electricity Edgar Phillips Ltd.; reinforcement, Expanded Metal Co. Ltd.; windows, Crittall Manufacturing Co. Ltd.; bricks, Accrington Brick & Tile Co. Ltd.; roofs, Blackwells & National Roofings Ltd.; fire escape, Richard Dix & Co. Ltd.; artificial stone, Agate Concrete Products Ltd.; terrazzo flooring, wall tiling, thermo plastic floor covering (ground floor "Semtex" first floor "Accotile") A. Andrews & Sons (Marbles & Tiles) Ltd.; bar fitting, The Bushboard Co. Ltd.; beer engines and fitting, Drake & Co.

R.C. Primary School at Blackhall. (Page 392.) Architect: C. L. Heslop, L.R.I.B.A. Assistant Architect: W. W. Marshall. General contractors: A. E. Gray & Son Ltd. Sub-contractors: ceilings, Draftsele Ltd.; roofing, Blackwells & National Roofings Ltd.; flooring, Binns Ltd., Terrazzo & Tile Co., Semtex Ltd.; Hollis Bros. Ltd.; heating, G. N. Haden & Sons Ltd.; plumbing and electrical work, Edgar Phillips Ltd.; windows, Doodson & Bain Ltd.; tyloglaze, Quickset Water Sealers Ltd.; decoration, J. Boanson & Son; steelwork, Redpath, Brown & Co. Ltd.; art. stonework, Crossley & Sons, Ltd.; bricks, Richard Thomas & Baldwins Ltd.; reinforced concrete raft, The Square Grip Reinforcement Co. Ltd.

The Kirkham Hotel at Hartlepool. (Page 392.) Architect: C. L. Heslop, L.R.I.B.A. Assistant Architects: N. Hewitson, R. Richley. Main contractors: Spaldin & Snaith. Sub-contractors: heating, Heslop & Hall Ltd.; plumbing and electricity, Edgar Phillips Ltd.; painters and decorators (exterior), J. Boanson & Son, (interior) J. L. Willoughby; forecourt, Tarslag Ltd.; bricks, Accrington Brick & Tile Co. Ltd.; roof, Blackwells & National Roofings Ltd.; carpets, lino curtains, Binns Ltd.; beer pumps, etc., Gaskell & Chambers (Newcastle) Ltd.; light fittings, Falk Stadelman & Co. Ltd.; special fittings, Donkin & Co. Ltd.

St. Josephs R.C. Church and Presbytery at Blackhall, West Hartlepool. (Page 392). Architect: C. L. Heslop, L.R.I.B.A. Assistant Architects: J. B. Tunstill, W. W. Marshall. Main contractors: Cecil M. Yuill Ltd. Sub-contractors: heating engineers, Heslop & Hall Ltd.; plumbing and electrical contractors, Edgar Phillips Ltd.; tiler, G. & W. H. Carter; Langley's Antique C. D. N. Clay Roofing Tiles, Langleys London Ltd.; terrazzo floor, A. Andrews & Sons (Marbles & Tiles) Ltd.; bricks (2½ in. Mountain Grey Rustics), Richard Thomas & Baldwins Ltd.; flat roof, Blackwells & National Roofings Ltd.; windows, Williams & Williams Ltd.

Roseworth Infant School, Stockton-on-Tees. (Page 394.) Architect: Thomas C. Hartley, A.R.I.B.A., Borough Architect. General contractors, Messrs. George Fordy and Son Ltd. Sub-contractors: heating, Spoors Ltd.; electrical installation, Doves of Darlington; Accotile flooring, Neuchatel Asphalte Co Ltd.; wood block floors, J. A. Hewetson & Co. Ltd.; concrete floor tiles, Standard Pavements Co. Ltd.; plumbing, Watson & Coates Ltd.; sanitary ware, Shanks & Co.; W.C. partitions, Flexoply Industries Ltd.; asbestos spray, Turners Asbestos Cement Co. Ltd.; felt roofing, Ruberoid Co. Ltd.; windows, Middlesbrough Casements Ltd.; cast stone, Ellis; bricks, Crossley & Co. Ltd.; painting, F. Roe, Ltd.; furniture, R. W. Bamforth & Co. Ltd.; fencing and gates, Selborne Engineering Co. Ltd.

Pumping Station at Fighting Cocks, Nr. Darlington, for the Tees Valley Water Board. (Page 395.) Architect: Ronald Cowan, A.R.I.B.A. Design of the reinforced concrete sub-structure: L. G. Mouchel & Partners. Main contractors: W. G. Turriff Ltd. Sub-contractors and Suppliers: electrical installation, C. Horne & Co. Ltd.; plaster, B. Lister; painting and decorating, Ed. Turner & Co. Ltd.; Glas-crete windows, J. A. King & Co. Ltd.; steel windows, Middlesbrough Steel Casements; bricks, Crossleys & Sons Ltd.; reconstructed stone, Stockton Stone & Concrete Co. Ltd.; terrazzo finishes Toffolo Jackson & Co. Ltd.; plaque over entrance, The Morris Singer Co. Ltd.; roof finish, D. Anderson & Son Ltd.

Reconstruction of the Slake Terrace Inn at West Cornforth, County Durham for J. W. Cameron & Co. Ltd., Brewers. (Page 395.) Architect: Ronald Cowan, A.R.I.B.A. General contractors: G. W. Lazenby & Co. Ltd., electrical installation; R. Pickergill & Son Ltd., floor and wall tiling; Commercial Marble & Tiles Ltd., bar counters and backfitting: G. W. Lazenby & Co. Ltd.

Bungalow for Dr. and Mrs. N. Rambush, Greenroofs, Aislaby Road, Yarm-on-Tees, Durham. (Page 396.) Architect. G. P. Stainsby, F.R.I.B.A., Assistant Architect, Mary Hodgson. General contractor, Norman Stonehouse. Sub-contractors: joinery, Norman Stonehouse; doors, F. Hills & Sons Ltd.; roofing, B. Wintersgill & Son; hot water supply, heating, G. N. Haden & Sons Ltd.; electric

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Hartlepool West View County School, Bruce Crescent, West Hartlepool. (Page 396.) Architect: G. P. Stainsby, F.R.I.B.A. Assistant Architect: Leslie R. Porter, General contractors, W. Pearson & Son, West Hartlepool. Sub-contractors: joinery, John Bottomley Ltd.; plumbing, J. Shouksmith & Sons Ltd.; roof tiling, B. Wintergill & Son; electrical installation, Dixon Barker & Son Ltd.; heating installation, Devegeux Moodie & Co. Ltd.; flat roof covering, Ruberoid Ltd.; decorating, Smiths Decorators, Ltd.; roads, tar paving, etc., Tarslag Ltd.

Staff Dining Hall, Belasis Lane, Billingham, for Messrs. Imperial Chemical Industries Ltd., Billingham Division, Co. Durham. (Page 397.) Architect: Architectural Section of the Billingham Division Chief Engineer's Department. Assistant Architect: A. J. Elder, A.R.I.B.A. General Contractor: J. Gerrard & Sons Ltd. Sub-contractors: heating and ventilation, J. Jeffreys & Co. Ltd.; kitchen equipment, Benham & Sons Ltd., Wigmore Street, London; electric lighting and power wiring, R. Pickersgill & Sons, Stockton-on-Tees; painters and decorators, Edwin Turner Ltd., Middlesbrough; plastering, Byron Lister, 30, Bridge Road, Stockton-on-Tees; windows, Williams & Williams Ltd.

Research Laboratory, Billingham Division, Imperial Chemical Industries Limited, Co. Durham, (Page 397.) Architect: Architectural Section of the Chief Engineer's Department. Divisional Staff Architect: G. Forsyth. General Contractor: Messrs. J. Gerrard & Sons Ltd., Swinton, Manchester. Sub-contractors: heating and ventilation, J. Jeffreys & Co. Ltd., Waterloo Road, London; electric lighting and power wiring, Wm. Anderton & Co. Ltd., Fenney Street, Manchester, 7; plastering, W. J. Roberts & Sons Ltd., Grange Road, Didsbury, Manchester, 20; painting, Edwin Turner Ltd., Middlesbrough; windows, H. Hope & Sons Ltd.

York Villa (Admission Unit), St. Luke's Hospital, Marton Road, Middlesbrough, for the Newcastle upon Tyne Regional Hospital Board. (Page 400.) Architects: Garbutt, Archibald & Archibald. General Contractor: Norman Thompson Ltd. Heating: G. N. Haden & Sons Ltd. Lighting and Power: North of England Engineering and Electrical Co. Ltd. Plumbing: Watson & Coates. Decorating: Hills Decorators.

Factory at Skelton-in-Cleveland, Saltburn-by-the-Sea, Yorkshire, for the North Eastern Trading Estates, Ltd. (Page 400.) Architects: Garbutt, Archibald & Archibald, A./L.R.I.B.A. Consultants: heating and lighting, Cairns & Byles. General Contractors: Higgs & Hill Ltd. Plumbing and Heating: J. H. Shouksmith & Sons Ltd. Lighting: A. Anderson & Son Ltd. Metal Window: Middlesbrough Casements Ltd.

Shops and Flats at Howlbeck Road, off Park Lane, for the Guisborough Urban District Council. (Page 400.) Architects: Garbutt, Archibald & Archibald, A./L.R.I.B.A. General Contractors: Premier Dwellings (Cleveland) Ltd.

Ambulance Station at Holgate, Middlesbrough. (Page 401.) Architect: Thomas A. Crawford, L.R.I.B.A. Assistant in Charge: K. H. Crawford. General Contractors: The Thornton Construction Co. Ltd. Electrical Contractors: A. Anderson & Son (Electrical Engineers) Ltd.; Bison beams, Concrete Ltd.

Roman Catholic Junior and Infants School at Cargo Fleet Lane, Middlesbrough. (Page 401.) Architect: Thomas A. Crawford, L.R.I.B.A. Assistant in Charge: K. H. Crawford. General Contractors: The Thornton Construction Co. Ltd.

Church at Berwick Hill Estate, Middlesbrough. (Page 401.) Architect: Thomas A. Crawford, L.R.I.B.A. Assistant in Charge: K. H. Crawford. General Contractors: Tarslag Ltd. Electrical Contractors: A. Anderson & Son (Electrical Engineers) Ltd.

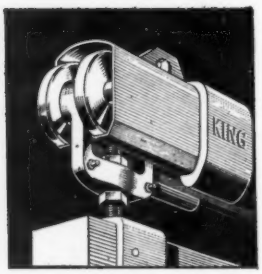
Green Lane County Primary School. (Page 404.) Architect: Philip R. Middleton, DIP.ARCH., A.R.I.B.A. Chief Assistant Architect: John Williams, B.ARCH., A.R.I.B.A. Assistant Architects: G. H. Fletcher, DIP.ARCH., A.R.I.B.A.; R. T. Miller, DIP.ARCH., A.R.I.B.A.; D. Pringle, DIP.ARCH., A.R.I.B.A. Reinforced concrete staircases: D. W. Cooper, B.SC., A.M.I.STRUCT.E.

Nursery Block:—Assistant Architects: G. H. Fletcher, DIP.ARCH., A.R.I.B.A.; T. Malcolm, Student, R.I.B.A. Caretaker's House:—Assistant Architects, G. H. Fletcher, DIP.ARCH., A.R.I.B.A.; R. T. Miller, DIP.ARCH., A.R.I.B.A.; D. Pringle, DIP.ARCH., A.R.I.B.A. General Contractor: Leslie & Co. Sub-contractors: steelwork, Dorman, Long & Co. Ltd.; heating installation, G. N. Haden & Sons Ltd.; electrical installation, Watson-Norie Ltd.; structural floor, Kleine Co. Ltd.; wood wool roofing, Stella Building Products; roofing felt, Ruberoid Co. Ltd.; accotile flooring, Rowan & Boden Ltd.; cork flooring, Mundet Cork Co.; floor tiles, Carter & Co. (London) Ltd.; metal windows, C. E. Welstead Ltd.; sanitary fittings, Adamsez Ltd.; glazed wall finish, Decorock Ltd.; suspended ceilings, Johnson Bros., Bowater Ceiling; other ceilings, Turners Asbestos Cement Co. Ltd.

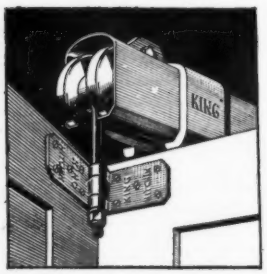
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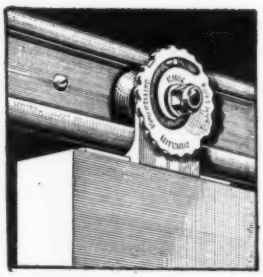
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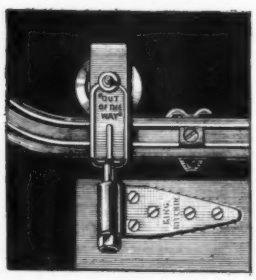
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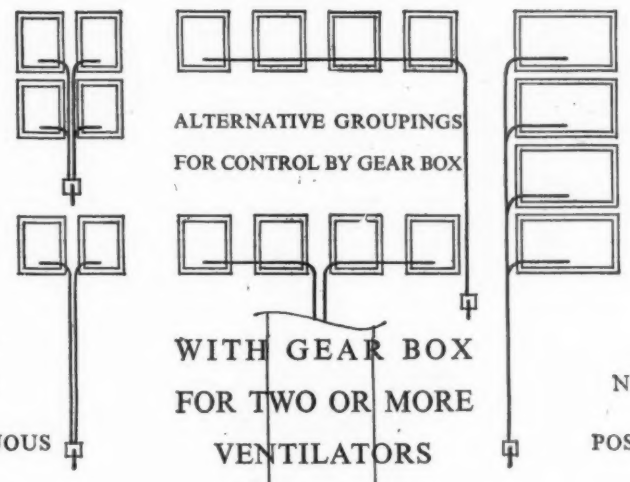
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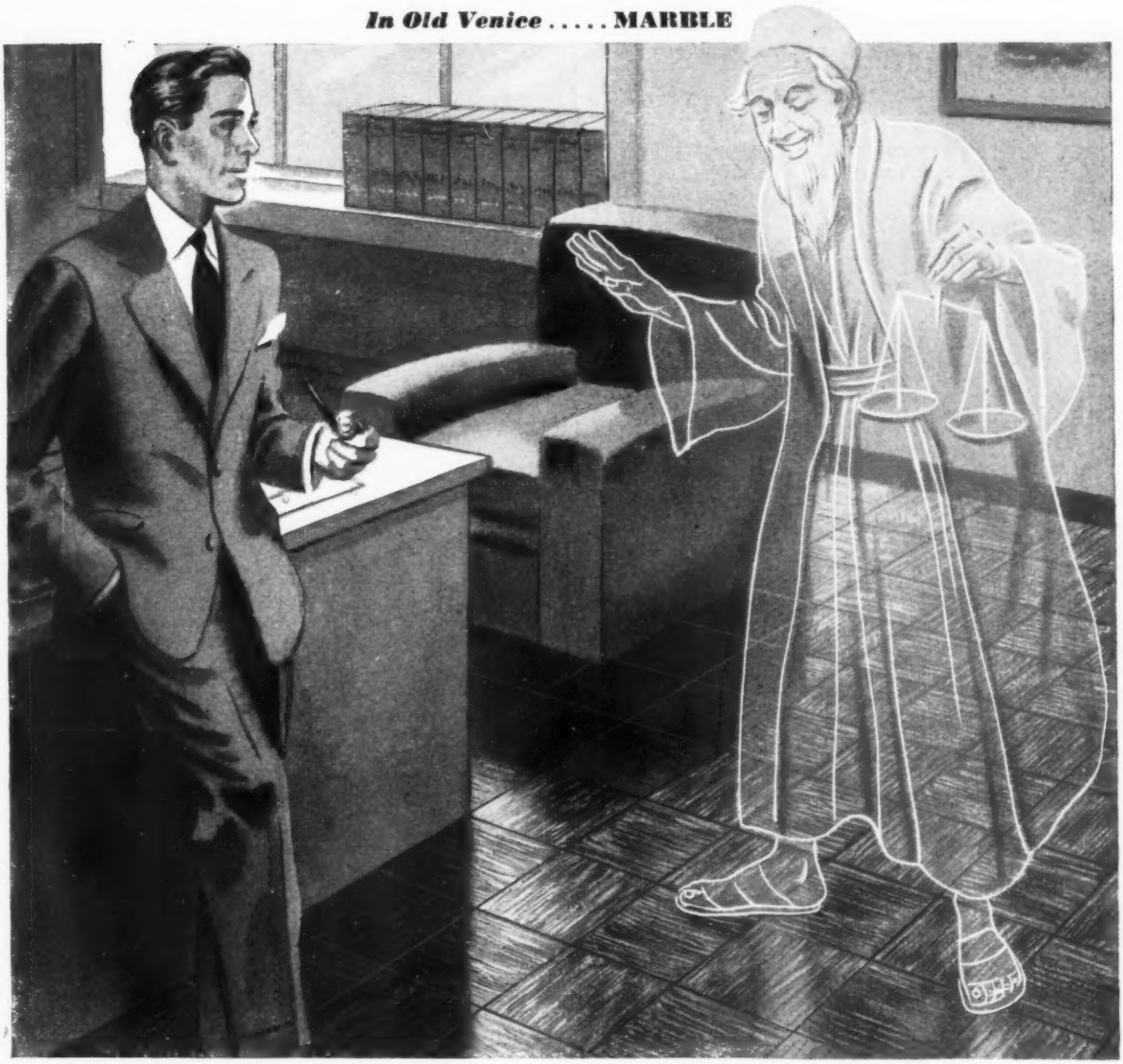
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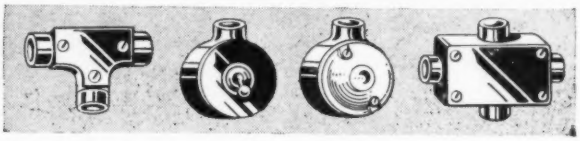
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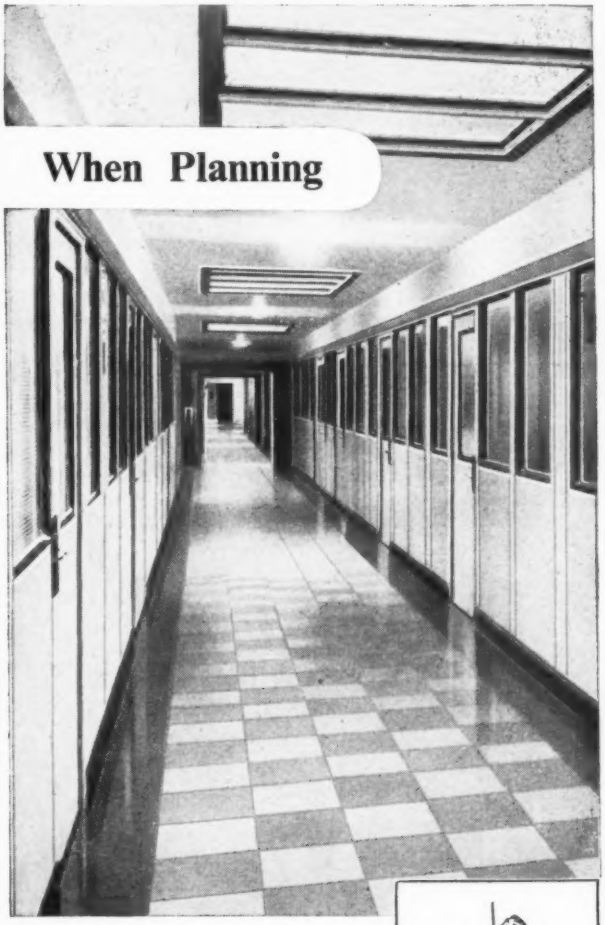


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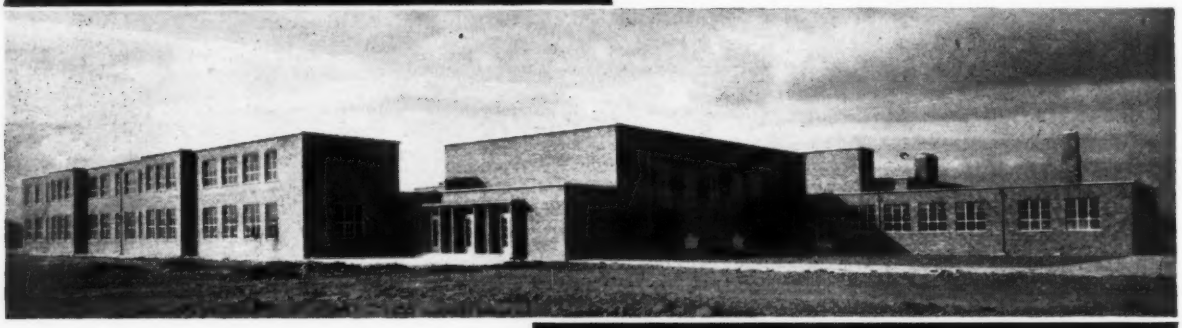
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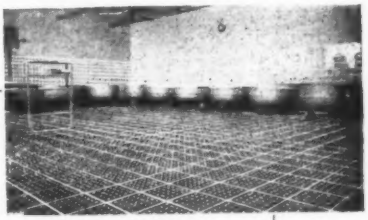
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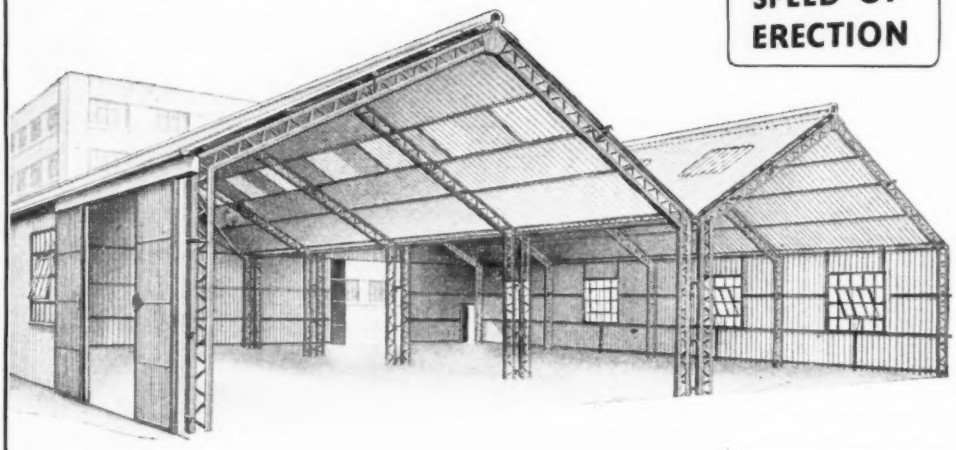
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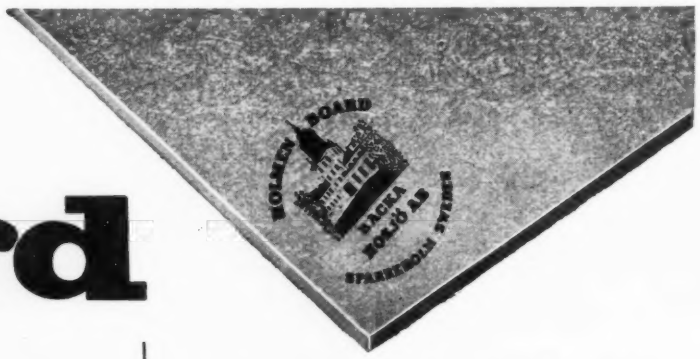
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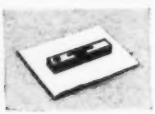
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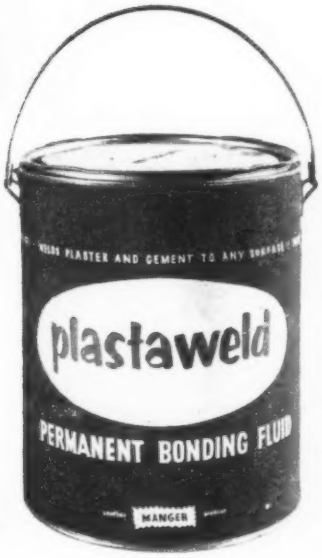
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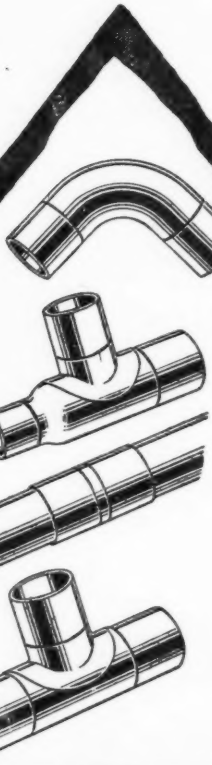
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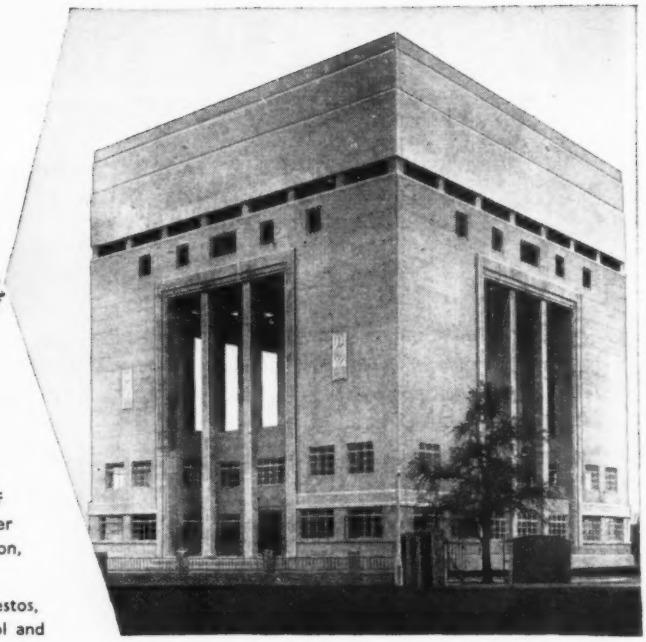
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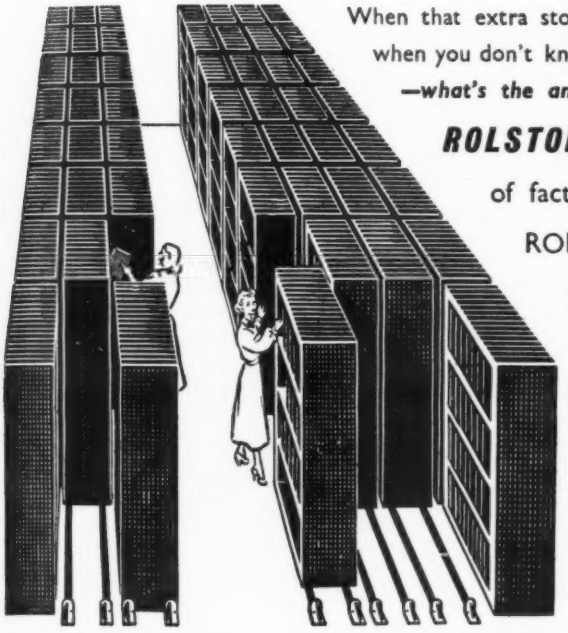
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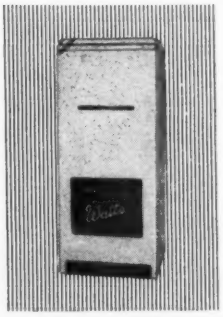
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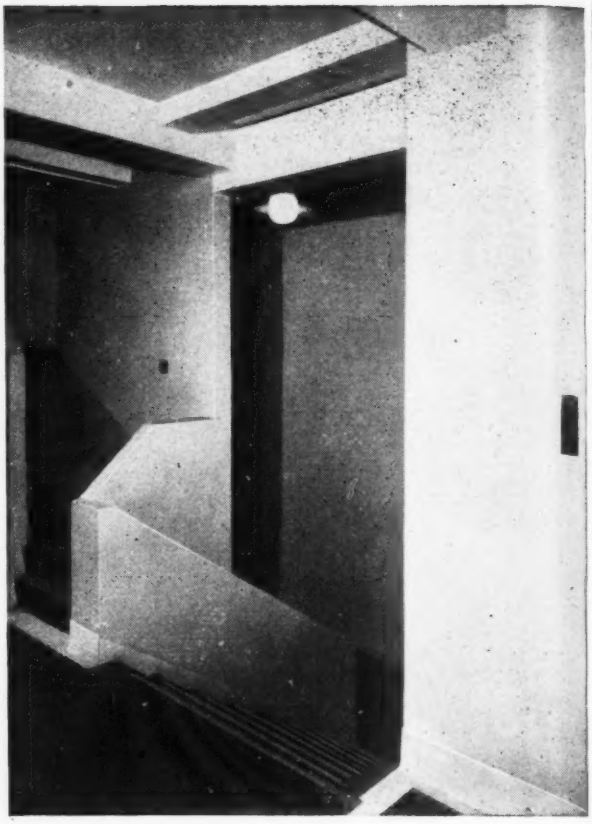


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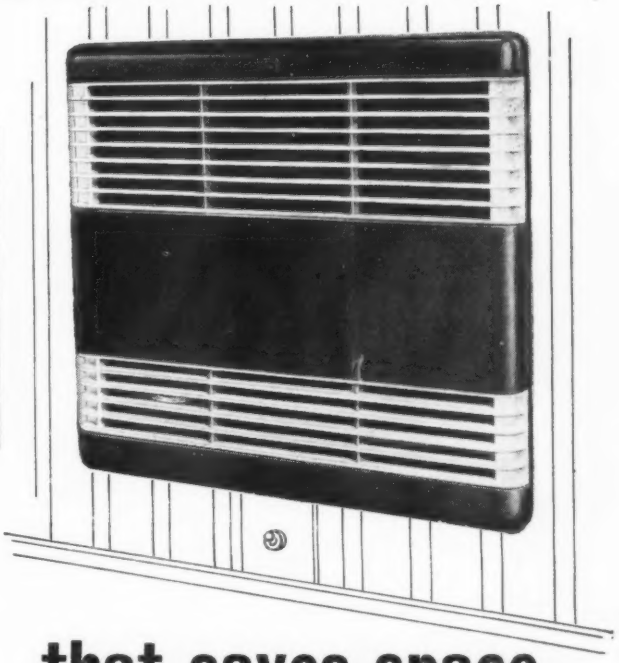
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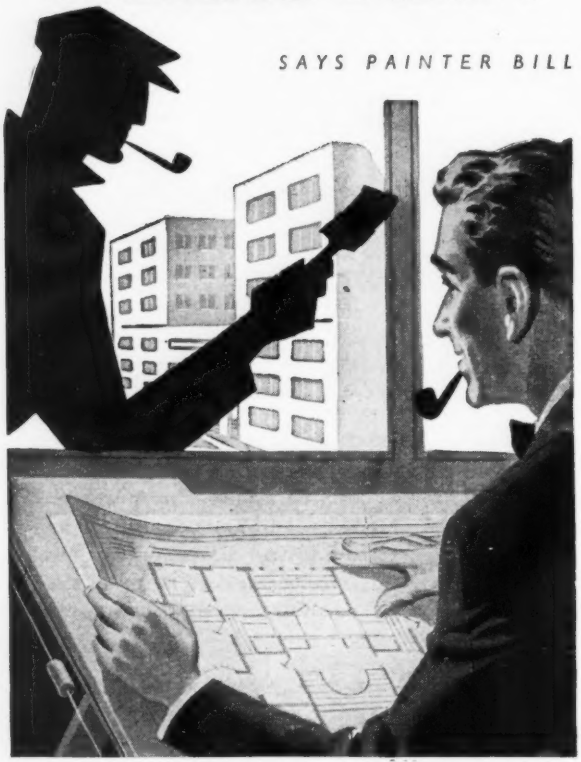
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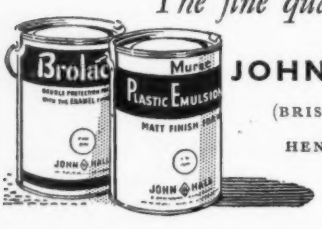
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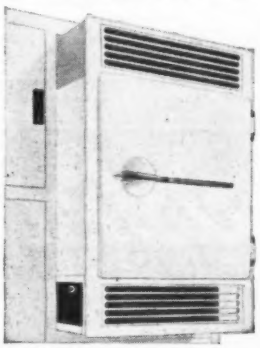
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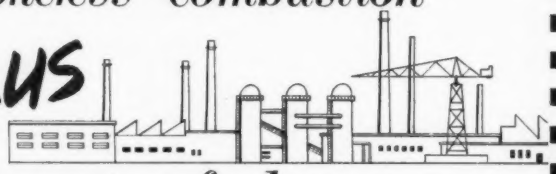
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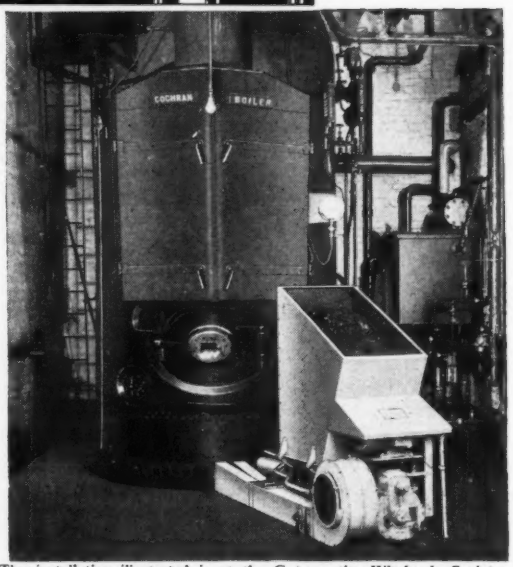
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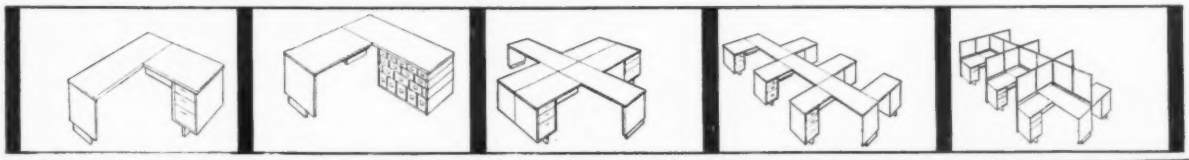
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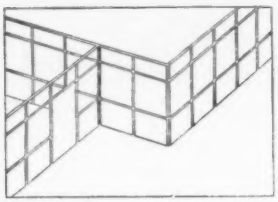
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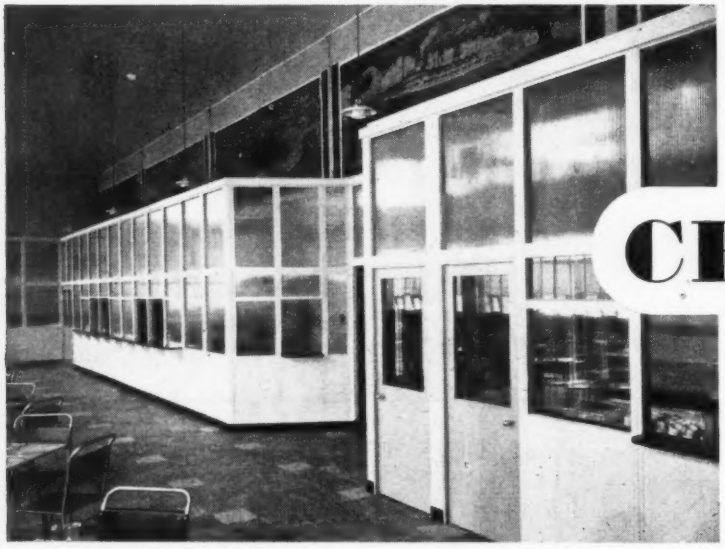


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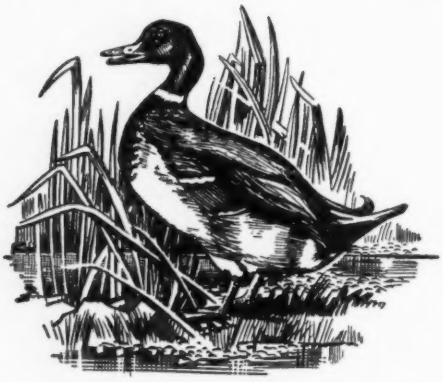
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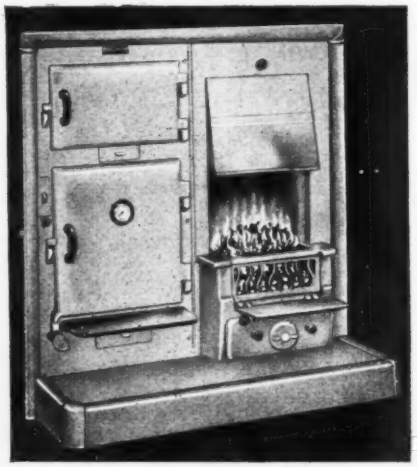
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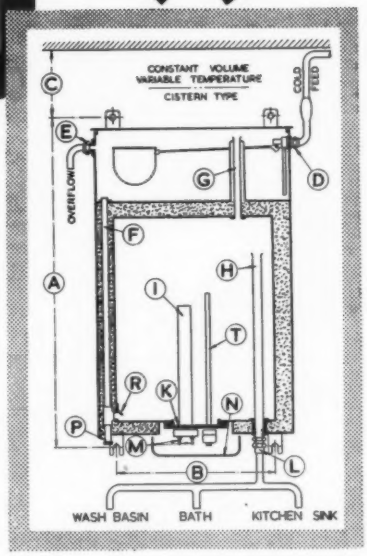
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inside information





C *Top of heater should be at least 6in. from ceiling to give proper access to ball valve cistern.*

D *Ball valve to BSS.1212: interchangeable seatings.*

E *Overflow union: provision for interchange with D.*

F *Cold water feed to heating chamber.*

G *Vent or expansion pipe.*

H *Hot water delivery pipe.*

I *Immersion heater: removable heating core.*

K *Removable bottom plate.*

L *Union connection for hot water supply piping.*

M *Main terminals for supply cable.*

N *Removable cover: access to all electrical connections.*

P *Drain fitting.*

R *Cold water inlet baffle.*

T *Temperature regulator.*

Internal arrangement of standard model **F.B.** cistern type Electric Water Heater

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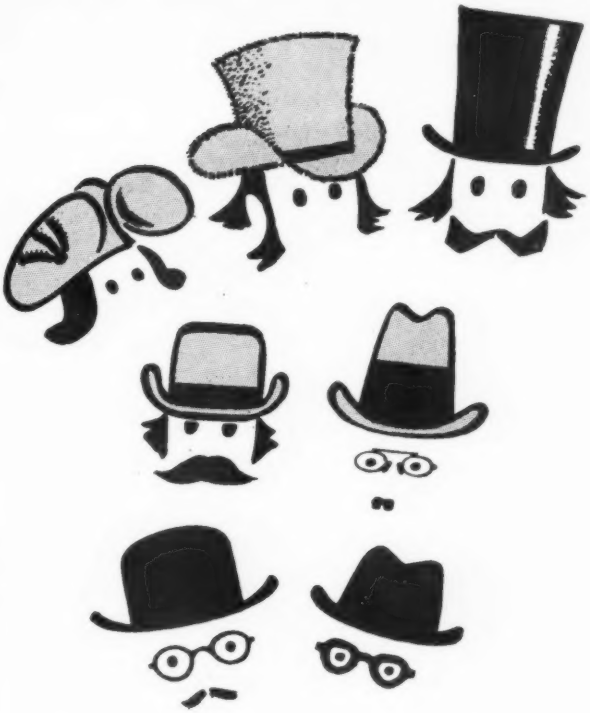
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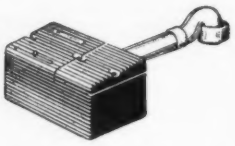
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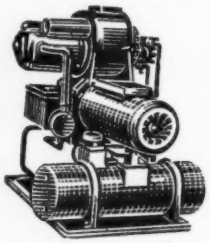
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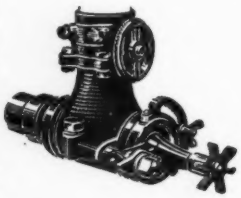
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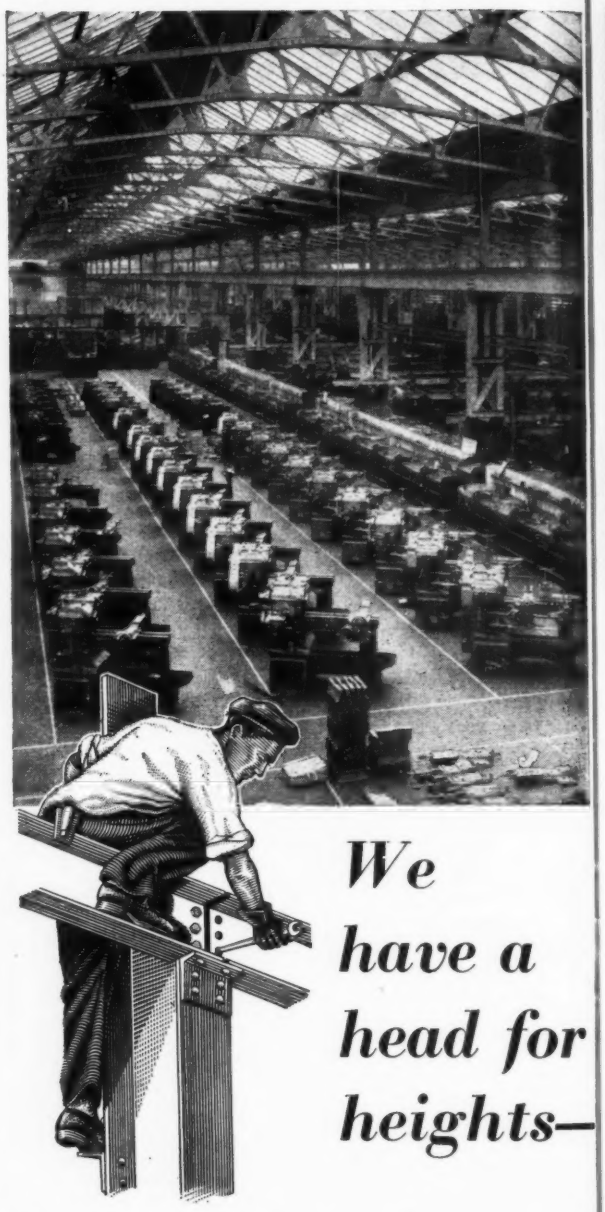


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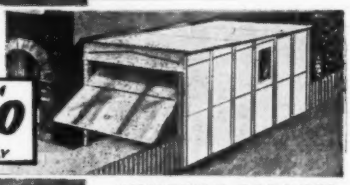


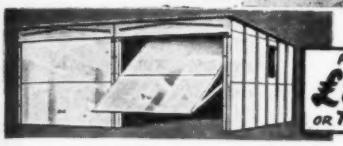
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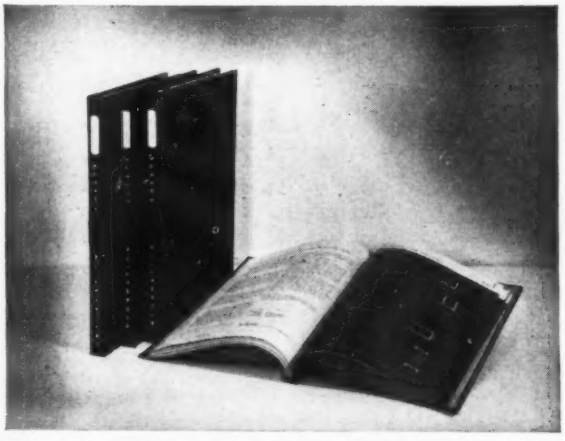
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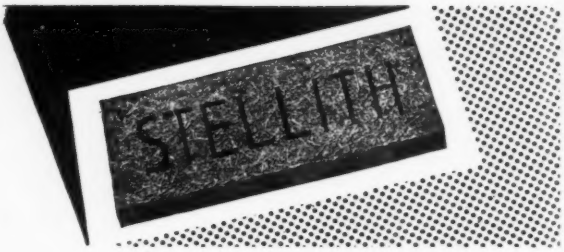


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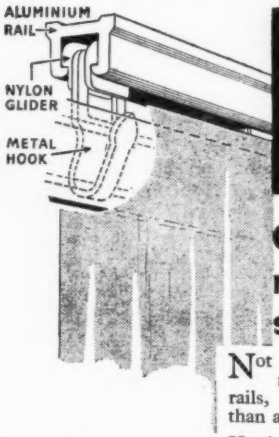
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BUCKS COUNTY COUNCIL.

Applications are invited for the appointment of a PRINCIPAL ASSISTANT ARCHITECT in the County Architect's Department. Salary J.N.C. Scale "B" (£1,092 10s.—£1,307 10s. p.a.).

The post requires an energetic Architect to run a section, directly responsible to the County Architect.

The appointment is superannuable and subject to medical examination.

A weekly allowance of 25s. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications, on forms to be obtained from F. B. Pooley, County Architect, County Offices, Aylesbury, must be returned by 30th September, 1955. 2794

BUCKS COUNTY COUNCIL.

Applications are invited for the following Architectural appointments in the County Architect's Department:—

ASSISTANT ARCHITECT, Grade VII (£900—£1,100 p.a.).

ASSISTANT ARCHITECT, Grade VI (£825—£1,000 p.a.).

ASSISTANT ARCHITECT, Grade V (£750—£900 p.a.).

ASSISTANT ARCHITECT, Architect's Special Scale (£650—£775 p.a.).

Applications are also invited for the appointment of an ASSISTANT QUANTITY SURVEYOR, Grade V (£750—£900 p.a.).

The appointments are superannuable, and subject to medical examination.

A weekly allowance of 25s. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications, on forms to be obtained from F. B. Pooley, County Architect, County Offices, Aylesbury, must be returned by 30th September, 1955. 2793

THURROCK U.D.C. Engineer and Surveyor's Department require JUNIOR PLANNING ASSISTANT, salary Grade I, A.P.T. Division, appointment pensionable. Candidates to be neat draughtsmen, have experience in surveying and levelling, and possess some knowledge of development control. Applications, together with names and addresses of three referees, to Clerk of Council, Council Offices, Grays, Essex, by 27th September, 1955. Canvassing disqualifies. Applicants to disclose in writing relationship to any member or senior officer of Council. 2792

THE GLASGOW SCHOOL OF ARCHITECTURE.
DEPARTMENT OF TOWN & COUNTRY PLANNING.
POST-GRADUATE COURSE FOR THE DIPLOMA IN TOWN PLANNING.

The Diploma may be taken either as a Full-time Day Course of one session (5 terms) or as a Part-time Course of two sessions. The Part-time Course involves a minimum attendance of two afternoons and three evenings per week. Both courses have been approved by the Town Planning Institute.

Only candidates who have qualified for an "approved" Degree or Diploma in Architecture or who have passed a recognized Final Examination in (*a*) Architecture; (*b*) Engineering or (*c*) Surveying; or who are graduates of a British University with an Honours Degree in Geography or a first or second class General Degree with Geography as a principal subject, are eligible for admission.

The course will commence in the College on Monday, 3rd October, 1955, at 5.30 p.m., when prospective candidates should attend for enrolment.

Further particulars may be obtained from the Secretary, The Royal Technical College, George Street, Glasgow, C.1. 2798

BOROUGH OF LEYTON

(Non-County Borough in the County of Essex: Population 103,200; R.V. £784,110).

Applications are invited for the appointment of:—

GENERAL ARCHITECTURAL ASSISTANT. Established post. Grade A.P.T., III-IV (£600—£825 p.a., plus London weighting allowance according to age, which at 26 is at a maximum of £30). The commencing salary will be fixed at a point in the scale according to the qualifications and experience of the successful applicant.

This appointment is primarily in connection with the proposed re-development schemes in the Borough, and candidates must have had good experience in the design and construction of houses, flats and Municipal buildings.

Alternate Saturday mornings free of duty and canteen facilities available.

Details of the appointment and form of application may be obtained from H. D. Peake, M.Sc.(Eng.), Borough Engineer and Surveyor, Town Hall, Leyton, E.10, to whom they should be returned not later than Wednesday, 5th October, 1955.

D. J. OSBORNE,
Town Clerk.

Town Hall, Leyton, E.10. 2746

SURREY COUNTY COUNCIL.

Applications invited for following appointments:—

(1) ASSISTANT ARCHITECT, Grade V (£750×£30—£900 p.a., plus London allowance). Should be Associate Member R.I.B.A.

(2) ARCHITECTURAL ASSISTANT, Grade II (£560×£20—£640 p.a., plus L.A.). Must be of good general training, and preference given those who have passed Inter. R.I.B.A.

(3) ARCHITECTURAL ASSISTANT, Grade I (£500×£20—£580 p.a., plus L.A.).

(4) ASSISTANT QUANTITY SURVEYOR, Grade IV (£675×£30—£825 p.a., plus L.A.). Should be Associate Member R.I.C.S.

Full details and present salary, accompanied by copies of three recent testimonials, to County Architect, County Hall, Kingston, as soon as possible. 2670

METROPOLITAN BOROUGH OF WANDSWORTH.
ARCHITECTURAL STAFF.

Applications invited for established posts of: (*a*) TWO SENIOR ASSISTANT ARCHITECTS, Grade A.P.T., V (£780—£930 p.a.), and (*b*) ONE ARCHITECTURAL ASSISTANT, Special Classes, Grade III(A) (£680—£805 p.a.).

Applicants for posts (*a*) must be Associates of the R.I.B.A., and have had experience in the design and planning of multi-storey blocks of flats and/or other framed buildings, and in the supervision of their erection. Experience in local authority work is desirable.

Applicants for post (*b*) must have passed Parts I and II of the R.I.B.A. Final or Special Final Examination or their equivalent at one of the recognised schools of architecture, and had at least 5 years' experience, including training.

Application forms obtainable from the Borough Engineer must reach me by 28th September, 1955.

R. H. JERMAN,
Town Clerk.

Municipal Buildings, Wandsworth, S.W.18. 2736

BOROUGH OF WREXHAM.

Appointment of:—

(*a*) ASSISTANT ARCHITECT. Salary A.P.T., IV (£675 to £825 per annum). A.R.I.B.A. or equivalent.

(*b*) JUNIOR ARCHITECTURAL ASSISTANT. Salary A.P.T., I (£500 to £580 per annum). Inter. A.R.I.B.A. or equivalent.

Applications are invited for the above appointments, candidates to supply details of qualifications, experience, and the names of two referees. Housing accommodation.

Further particulars from the Borough Surveyor, Bodhyfryd, Chester Street, Wrexham. Closing date: 26th September, 1955.

PHILIP J. WALTERS,
Town Clerk.

Guildhall, Wrexham.
7th September, 1955. 2783

ISLE OF ELY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments on the staff of the County Architect:—

(1) SECOND ASSISTANT ARCHITECT. Salary £650×£25 to £775 p.a.

(2) THIRD ASSISTANT ARCHITECT. Salary £650×£25 to £775 p.a.

(3) SECOND ASSISTANT QUANTITY SURVEYOR. Salary £600×£25 to £725 p.a.

(4) THREE JUNIOR ARCHITECTURAL ASSISTANTS. Grade Misc. I/II/III. £346—£485 p.a.

The above posts are permanent, subject to the National Joint Council Scheme of Conditions of Service, the Local Government Superannuation Act, and to a medical examination.

Intending applicants are to apply for forms for the posts in which they are interested to the County Architect, County Hall, March, to whom they are to be returned not later than Friday, 30th September, 1955.

R. F. G. THURLOW,
Clerk of the County Council.

2709

CWMBRAN DEVELOPMENT CORPORATION.
CLERK OF WORKS.

Applications are invited for the above superannuable post in the Chief Architect's Department to supervise the erection of permanent houses and other buildings; including setting out, levelling, measuring and keeping records.

Commencing salary will be £565 on the scale £565×£25 to £665 per annum.

Housing accommodation will be made available in suitable cases or otherwise lodging expenses in accordance with the Corporation's scale will be allowed for a limited period to married men.

Applications, which should state age, experience, present and former employment (with applicable salaries), together with the names and addresses of two referees, should reach the undersigned by not later than 26th September, 1955.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,
Chief Architect.

Victoria Street, Cwmbran, Monmouthshire. 2710

LINDSEY (LINCOLNSHIRE) COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Vacancies on the permanent staff for:—

(*a*) FOUR ASSISTANT ARCHITECTS (A.R.I.B.A.), Grade IV, £675—£825.

(*b*) TWO ASSISTANT ARCHITECTS (Inter. R.I.B.A.), Grade II, £560—£640, or (A.R.I.B.A.), Special Grade, £650—£775.

(*c*) ASSISTANT QUANTITY SURVEYOR (A.R.I.C.S.), Grade V, £750—£900.

(*d*) HEATING ENGINEERING ASSISTANT, Grade III, £600—£725.

(*e*) ELECTRICAL ENGINEERING ASSISTANT, Grade II, £560—£640.

(*f*) THREE BUILDING INSPECTOR-SURVEYORS, Grade II, £560—£640.

Applicants for (*f*) should be capable of preparing drawings and specifications for small works of additions and alterations.

Starting salary not more than two steps up grade may be granted in special circumstances.

N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any member or senior officer of the Council. Applications, giving age, qualifications, experience, present salary, copies of two recent testimonials, to be sent to the undersigned not later than Friday, 30th September, 1955.

A. RONALD CLARK, A.R.I.B.A., A.M.T.P.I.,
County Architect.

County Offices, Lincoln. 2803

LONDON COUNTY COUNCIL, Parks Department, requires:—TRACER in construction and layout division. Experience in architectural and landscape work preferred. Rate of pay: 121/6—7/- 148/6—10/- 219/6. Application forms from Chief Officer, Parks Department (A.1.), Old County Hall, S.E.1. WHitehall 3121, Ext. 33 (1480). 2818

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

The Board are engaged on an expanding programme of major hospital projects within the Counties of Middlesex, Hertford, Bedford, Buckinghamshire and Berkshire. The following staff, who must possess appropriate general experience in contemporary architectural design and construction, are required to fill a number of newly created posts on the establishment of the Regional Architect:—

(*a*) SENIOR ASSISTANT ARCHITECTS, Salary scale £920×£30(5)×£25—£1,095 plus £40—£50 London Weighting.

(*b*) ASSISTANT ARCHITECTS, Salary scale £640×£25(4)×£30(4)×£35(2)—£930 plus £20—£40 London Weighting.

(*c*) ARCHITECTURAL ASSISTANTS, Salary scale £480 (age 21 and over) ×£20(7)×£25(2) —£670 plus £20—£30 London Weighting.

Candidates for posts (*a*) and (*b*) above should hold full professional qualifications; those for post (*c*) should have reached Intermediate professional qualification. Starting salaries may be above minimum, having regard to the extent of experience since qualifying or reaching intermediate standard respectively. Posts are subject to Whitley Council conditions and are superannuable. Apply stating which post and giving age, qualifications (with dates) and experience to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, London, W.1, by 8th October, 1955. 2830

LEEDS REGIONAL HOSPITAL BOARD.
SECOND ADVERTISEMENT.

Applications are invited for the following Appointments on the Board's Headquarters staff, for work in connection with the design and erection of a new hospital at Huddersfield.

ONE SENIOR ASSISTANT ARCHITECT.

Salary £920×£30 (5)×£25 (1)—£1,095 per annum.

Applicants must be Registered Architects, with Final R.I.B.A. or Diploma in Architecture. Experience in hospital planning an advantage, and ability to produce good contemporary architecture essential. The applicant selected will be responsible directly to the Regional Architect (P. B. Nash, A.R.I.B.A.) for the control of the section of the Architectural staff engaged on the new project.

ONE ASSISTANT ARCHITECT.

Salary £640×£25 (4)×£30 (4)×£35 (2)—£930 per annum.

Applicants must be Registered Architects, with Final R.I.B.A. or Diploma in Architecture. Commencing salary dependent upon practical experience at full professional standard, but the number of additional increments will not be more than the number of years by which the applicant's age exceeds 25. Experience in hospital planning an advantage.

ONE TEMPORARY ARCHITECTURAL ASSISTANT.

Salary £480×£20 (7)×£25 (2)—£670 per annum.

Applicants must have passed Intermediate Examination of the R.I.B.A. Commencing salary dependent upon applicant's age, and amount of experience since passing Intermediate Examination, but will not exceed £560 per annum. Applicant must have had a sound architectural training and some practical experience in a Practising Architect's office is essential.

Applications, giving all relevant particulars, including age, experience, war service, if any, and the names of two referees, should be forwarded to the Secretary, Park Parade, Harrogate, not later than 8th October, 1955. 2888

CORBY DEVELOPMENT CORPORATION.

Applications are invited for the following appointments in the Department of the Chief Architect:—

SENIOR ASSISTANT ARCHITECT (£900×£50—£1,100).

ASSISTANT ARCHITECTS (£720 × £40—£840).

ARCHITECTURAL ASSISTANTS (£600×£30—£690).

The work of building the New Town of Corby from 23,000 to 40,000 population is now reaching its most intensive phase, and during the next seven to ten years will offer exceptional variety of experience in the design and construction of houses, flats, shops and factories.

Appointments are subject to Local Government Superannuation, and housing is available.

Applications, stating age, education, training, qualifications, experience, past and present appointments and salaries, together with the names of two referees, must reach the undersigned by Monday, 10th October, 1955.

R. F. BROOKS GRUNDY,
General Manager.

Spencer House, Corby, Northants. 2893

HAMPSHIRE.

Applications are invited for the post of TECHNICAL ASSISTANT in the County Planning Department, on Grade II of the National Scales (£560—£640), to work in the Headquarters office at Winchester. Candidates must have passed the Intermediate Examination of the Town Planning Institute or of a related professional body, and have had experience in the Planning Department of a Local Planning Authority. The appointment is pensionable, and will be subject to a satisfactory medical report. In approved cases the County Council are prepared to assist newly appointed staff to meet removal and other expenses.

Applications, stating age, education, qualifications and experience, together with a copy of one testimonial and the names of two referees, should reach the County Planning Officer, Litton Lodge, Clifton Road, Winchester, by the 8th October. 2850

NORTH RIDING EDUCATION COMMITTEE.

Applications are invited for the following vacancies in the Education Architect's Department:—

(*a*) ARCHITECTURAL ASSISTANT.
A.P.T., II. Salary £560—£640.
A.P.T., I. Salary £500—£580.
Applicants to have passed the Intermediate R.I.B.A.

(*b*) ASSISTANT QUANTITY SURVEYOR.
Grade A.P.T., IV and V. Salary £675—£900.
Applicants to be Members of the Royal Institute of Chartered Surveyors.

(*c*) ASSISTANT QUANTITY SURVEYOR.
Special Grade (£650—£775).
Applicants to be Members of the R.I.C.S.

(*d*) QUANTITY SURVEYING ASSISTANT.
A.P.T., II. Salary £560—£640.
Applicants to have passed the Intermediate R.I.C.S.

Previous experience may be taken into account in fixing commencing salaries, and experience with Local Authority not essential. Car, travelling and subsistence allowance where applicable. Local Government Superannuation Act. Canvassing disqualifies. Further particulars from F. Barraclough, County Hall, Northallerton. 2895

METROPOLITAN BOROUGH OF FULHAM.
BOROUGH ARCHITECT'S AND HOUSING DEPARTMENT.

(i) SENIOR ASSISTANT QUANTITY SURVEYOR, A.P.T. V (£750 × £30 —£900 + £30 p.a. London weighting). Applicants must be experienced in the preparation of bills of quantities, building management of large contracts for multi-storeyed flats and public buildings. A.R.I.C.S. (Quantities) Exam. or equivalent.

(ii) ASSISTANT QUANTITY SURVEYOR, A.P.T., III (£600×£25—£725+£30 p.a. London weighting). Applicants must be experienced in taking-off, final measurement, preparation interim certificates, final accounts, and have passed Intermediate R.I.C.S.

(iii) ASSISTANT ARCHITECT, A.P.T., III or IV (£600—£725 or £675×£30—£825+£30 p.a. London weighting). Applicants must have had experience in handling jobs in progress, dealing with contracts, and in planning and designing schemes of multi-storey flats.

(iv) ARCHITECTURAL ASSISTANT, A.P.T., I or II (£500—£580 or £560—£640+£20—£30 London weighting, according to age). Applicants must have had at least two years' drawing office experience.

Application forms from Town Clerk, Town Hall, S.W.6. Closing date: 27th September 2852

COUNTY BOROUGH OF WOLVERHAMPTON.
APPOINTMENT OF SENIOR ASSISTANT ARCHITECT.

Applications incited for above appointment in Borough Engineer's Department. Salary Grade A.P.T., V (£750 to £900 per annum).

Candidates should be Associate Members of the Royal Institute of British Architects.

Superannuable post, medical examination, N.J.C. Conditions of Service, terminable by one month's notice on either side.

Housing accommodation can be made available if necessary.

Applications, stating age, qualifications, training and experience, with the names of not less than two persons to whom reference may be made, should be addressed in envelope endorsed "Senior Assistant Architect," to Borough Engineer, Town Hall, Wolverhampton, by Wednesday, 5th October.

A. G. DAWTRY,
Town Clerk.

Town Hall, Wolverhampton. 2880

BIRMINGHAM REGIONAL HOSPITAL BOARD.
ARCHITECTURAL STAFF APPOINTMENTS.
(Donald A. Goldfinch, ERD, FRIBA, Dip.TP—Architect to the Board).

(*a*) SENIOR ASSISTANT ENGINEER (heating and ventilation) £920 × £30(5) × £25(1) — £1,095. Duties include design, preparation of plans, specifications and technical reports; supervision of new installations of heating and ventilation, boiler house plants and other hospital services. AMI.Mech.E essential, AMIH and VE desirable.

(*b*) ASSISTANT ARCHITECTS (2) £640 × £25(4) × £30(4) × £35(2) — £930 according to age and experience. Applicants must be registered architects having passed requisite examinations. Experience of hospital planning and construction an advantage. Sound knowledge specifications essential.

(*c*) ASSISTANT QUANTITY SURVEYORS (2)—£640 × £25(4) × £30(4) × £35(2) — £930. Final RICS or IQS or IAAS and experience in taking off and preparing bills of quantities and settling final accounts essential.

(*d*) ASSISTANT ENGINEERS (2)—£640 × £25(4) × £30 (4) × £35 (2)—£930 according to age and experience. AMIHVE desirable.

(*e*) ARCHITECTURAL ASSISTANTS (2) (required for large new hospital project) £480 × £20(7) × £25(2) — £670. Point of entry according to experience maximum £560. Inter-RIBA essential.

(*f*) JUNIORS (2 architectural, 1 engineering) Male (aged 16) maximum £400 (aged 25) Female £165 (aged 16) maximum £330 (aged 25) (salary under revision equal pay to be implemented). Successful candidates expected to study for professional examinations.

All appointments superannuable. Apply naming three referees to Secretary, 10, Augustus Road, Birmingham 15, by 3rd October, 1955. 2829

STAFFORDSHIRE COUNTY COUNCIL.
COUNTY PLANNING AND DEVELOPMENT DEPARTMENT.

Applications are invited for the appointment of a PLANNING ASSISTANT, on A.P.T., Grades I-II (£500—£640 per annum), in the Southern Area Planning Office at Wolverhampton.

Applicants for the appointment should have had training in an Architect's, Engineer's, Surveyor's or Planning Office, and preference will be given to those who have passed the Intermediate Examination of the Town Planning Institute or its equivalent.

Applicants should give details of age, education and training qualifications, present and previous appointments and experience, and the names of two persons to whom reference can be made. Applications, in which relationship to any member or senior officer of the County Council must be disclosed, should be sent to D. W. Riley, County Planning and Development Officer, 41a, Eastgate Street, Stafford, not later than 3rd October, 1955.

T. H. EVANS,
Clerk of the County Council.

2833

CUMBERLAND COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments to the Architectural Staff. N.J.C. Service Conditions. Posts pensionable. Subject to medical examination.

(*a*) ASSISTANT ARCHITECTS (A.P.T. Grade V £750—£900).
Should be A.R.I.B.A. with experience of large contracts and supervisory work.

(*b*) ASSISTANT ARCHITECT (A.P.T. Grade IV £675—£825).
Should be A.R.I.B.A. preferably with schools experience.

Applications, on forms obtainable from John H. Haughan, F.R.I.B.A., County Architect, 15, Portland Square, Carlisle, to be received by him not later than Friday, 14th October, 1955.

G. N. C. SWIFT,
Clerk of the County Council.

2828

CARDIGANSHIRE COUNTY COUNCIL.

Applications are invited for the undermentioned vacancies in the County Architect's Department, County Hall, Aberaeron:—

(*a*) SENIOR QUANTITY SURVEYOR (A.P.T. Grade V—£750—£900).

(*b*) ASSISTANT ARCHITECT (A.P.T. Grade IV—£675—£825).

(*c*) ARCHITECTURAL ASSISTANT (A.P.T. Grade II—£560—£640).

(*d*) ARCHITECTURAL ASSISTANT (A.P.T. Grade I—II—£500—£640).

Candidates for (*a*) should be Associate Members of the R.I.C.S. (*b*) Associate Members of the R.I.B.A. (*c*) and (*d*) have passed the Intermediate Examination of the R.I.B.A.

Application forms and conditions of appointment can be obtained from the County Architect and must be returned to the undersigned not later than 10th October, 1955.

J. E. R. CARSON,
Clerk of the Cardiganshire County Council.

Swyddfa'r Sir,
Marine Terrace,
Aberystwyth. 2821

AMENDED ADVERTISEMENT.
URBAN DISTRICT COUNCIL OF CORBY.

Appointment of (*a*) Senior Quantity Surveyor.
(*b*) Architectural Assistant.

Applications are invited for the following appointments in the department of the Engineer and Surveyor:—

(*a*) SENIOR QUANTITY SURVEYOR:
Grade A.P.T. VI (£825 × £35(5) — £1,000) commencing at £825 per annum.

(*b*) ARCHITECTURAL ASSISTANT:
Grade A.P.T. III (£600 × £25(5) — £725) commencing at £600 per annum.

The immediate building programme includes scheme for a Public Hall, covered Swimming Bath and Café, Cemetery Chapel and adjoining Staff Houses, in addition to Housing Contracts.

Housing accommodation will be made available to the successful candidates (if married).

Applicants for appointment (*a*) must have passed the final R.I.C.S. (Quantities Section) examination and be experienced in the preparation of Bills of Quantities, adjustment of Variations and settlement of final accounts. Previous experience of substantial Contracts for local authority housing is desirable.

Applicants for appointment (*b*) must have passed the R.I.B.A. intermediate examination or its equivalent at a recognized School of Architecture, and have had at least two years' experience in an Architect's Office (exclusive of pupilage). Preference will be given to applicants who have reached an advanced stage in preparing for the Final Examination and who have had Testimonies of Study accepted. A contemporary outlook and all-round general experience is desirable.

The provisions of the Local Government Superannuation Acts, 1937/1953, will apply to these appointments.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than the first post on Monday, the 3rd October, 1955.

Testimonials will be required only from applicants selected for interview.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
Corby, Northants.
12th September, 1955. 2823

BOROUGH OF WOOD GREEN.
CIVIC CENTRE SCHEME—CLERK OF WORKS.

The Council invite applications for the post of CLERK OF WORKS in connection with the erection of their New Municipal Offices and Council Suite.

The appointment is on the Temporary Establishment, and the inclusive salary will be within the range of £750 to £900 per annum, according to qualifications and experience.

Candidates must have had extensive experience in the supervision of the erection of large public buildings, particularly those constructed in reinforced concrete.

Applications, stating age, qualifications and experience, and accompanied by copies of two recent testimonials, must reach the undersigned not later than Saturday, 1st October, 1955.

Canvassing will disqualify.

A. BARNETT,
Town Clerk.

Town Hall, Wood Green, N.22.
16th September, 1955. 2834

HARLOW DEVELOPMENT CORPORATION.
Applications invited from qualified Architects for the post of ARCHITECT, Grade III (£975×£60—£1,275 per annum). The successful candidate will be required to act in the capacity of Group Leader in the Industrial Section of the New Town work. Candidates must have had considerable experience in the design of factories and the running of major building contracts. They must also have had experience in the control of staff and be capable of conducting preliminary negotiations with industrialists. Accommodation available in 3/4 months in suitable cases. Superannuation.
Applications, giving full details and names of two referees, to General Manager, "Terlings," Harlow, Essex, within 7 days. 2891

CORBY DEVELOPMENT CORPORATION.
LANDSCAPE ARCHITECT AND ASSISTANT PLANNER.
Applications are invited for the appointment of a Landscape Architect and Assistant Planner in the office of the Chief Architect, at a salary within the scale £720×£40 to £840. Candidates should be Associates or Students of the Institution of Landscape Architects, preferably with some experience in the design of housing estates.
Appointments are subject to superannuation under the Local Government scheme. Housing is available.
Applications, stating age, education, training, qualifications, experience, past and present appointments and salaries, together with the names of two referees, must reach the undersigned by Monday, 10th October, 1955.
R. F. BROOKS GRUNDY,
General Manager.
Spencer House, Corby, Northants. 2892

CITY ARCHITECT'S DEPARTMENT.
Applications are invited for the following appointments:—
ASSISTANT ARCHITECTS, Grade A.P.T., V (£750—£900).
Candidates must be Registered Architects, competent in architectural design.
ASSISTANT ARCHITECT, A.P.T., IV (£675—£825).
ASSISTANT ARCHITECT, A.P.T., III (£600—£725).
ARCHITECTURAL ASSISTANTS, A.P.T., II (£560—£640).
ARCHITECTURAL ASSISTANT, A.P.T., I (£500—£580).
DRAUGHTSMAN (Male or Female), G.D. (male scale according to age).
TRACERS (Female), G.D. (according to age).
The payment of salary increments will be subject to satisfactory service, and will be granted normally with effect from the 1st April following the completion of six months' service.
The appointments are subject to the Local Government Superannuation Acts, 1937-1953, and the successful applicants will be required to pass a medical examination.
Application forms may be obtained from the City Architect, Priestley House, Quarry Hill, Leeds, 9, to whom they should be returned, together with copies of three recent testimonials, by 12 noon Saturday, 8th October, 1955.
Canvassing in any form, either directly or indirectly, will be a disqualification.
R. A. H. LIVETT, O.B.E., A.R.I.B.A.,
City Architect.
Priestley House, Quarry Hill, Leeds, 9.
13th September, 1955. 2877

COUNTY BOROUGH OF BURY.
Applications invited from suitably qualified persons for the appointment of ARCHITECTURAL ASSISTANT, Borough Engineer's Department, Special Grade (£650—£775).
Applications, stating age, details of training, qualifications and experience, together with names and addresses of two persons to whom reference may be made, must reach me not later than 30th September.
EDWARD S. SMITH,
Town Hall, *Town Clerk.*
Bury.
9th September, 1955. 2827

ARGYLL COUNTY COUNCIL invite applications for the appointment of a QUANTITY SURVEYING ASSISTANT, in the County Architect's Department. Salary scale, Grade A.P.T., IV-VI (£615—£815), with placing according to experience and qualifications. The post is superannuable. HOUSING ACCOMMODATION WILL BE PROVIDED IF REQUIRED.
Apply, giving details of qualifications and experience, along with copies of two recent testimonials, to County Architect, County Offices, Dunoon, within seven days of publication of this advertisement.
A. D. JACKSON,
County Clerk. 2871

NORTH THAMES GAS BOARD.
An ARCHITECTURAL ASSISTANT is required in the Drawing Office of the Chief Engineer's Department, Westminster.
Applicants should have passed the R.I.B.A. Final Examination, should be capable of preparing working drawings and specifications, and supervising the work on contracts. Experience in design and planning of industrial buildings would be an advantage.
Starting salary, depending on age and qualifications, will be within the range £650—£770 per annum, and the successful candidate will be required to join the Staff Pension Scheme.
Applications to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 666/278. 2869

AUSTRALIA—UNIVERSITY OF MELBOURNE.
Applications are invited for the position of SENIOR LECTURER IN TOWN AND REGIONAL PLANNING.
The salary range will be at least £A1,750 to £A2,000 per annum, with superannuation similar to F.S.S.U.
Further particulars and information as to the method of application may be obtained from the Secretary, Association of Universities of the British Commonwealth, 36, Gordon Square, London, W.C.1.
The closing date for the receipt of applications, in Australia and London, is 7th November, 1955. 2867

WORCESTERSHIRE COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
Applications are invited for the following posts:—
ASSISTANT ARCHITECTS, A.P.T., IV (£675—£825).
ARCHITECTURAL ASSISTANTS, A.P.T., II (£560—£640).
Application forms and further particulars should be obtained from L. C. Lomas, F.R.I.B.A., County Architect, 14, Castle Street, Worcester, not later than 7th October, 1955. (C.62) 2868

FEDERATION OF MALAYA.
SENIOR LECTURER IN ARCHITECTURE required at Kuala Lumpur Technical College. Degree in Architecture or A.R.I.B.A. essential, with teaching experience. Salary within scale £1,010—£2,119 a year, plus variable expatriation and cost-of-living allowances. Post temporary, on contract for three years, with lump sum resettlement grant on satisfactory completion. Teachers' home pension rights preserved. Quarters at low rental. Free passages. Generous home leave. Low income tax. Free medical attendance. Further particulars and application forms from the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1, quoting reference BCD. 114/23/06. Closing date for receipt of initial enquiries: 14th October, 1955. 2863

BOROUGH OF FINCHLEY.
TEMPORARY JUNIOR ARCHITECTURAL ASSISTANT.
HOUSING AND TOWN PLANNING DEPARTMENT.
Salary within Grade I, A.P.T. Division (£500×£20—£580), plus London weighting.
Candidates must have passed R.I.B.A. Inter. Examination, and should have practical office experience of housing work.
The National Scheme of Conditions of Service and the Local Government Superannuation Acts apply, and medical examination required.
Applications, stating age and full particulars of qualifications and experience, with the names of two referees, to the Borough Housing and Town Planning Officer, The Avenue, Finchley, N.3, by first post on Monday, the 3rd October, 1955.
T. M. FRANKLIN,
Town Clerk. 2836

COUNTY OF HUNTINGDON.
COUNTY ARCHITECT'S DEPARTMENT.
Applications are invited from suitably qualified persons for the following appointments:—
A SENIOR ARCHITECTURAL ASSISTANT, Grade A.P.T., VI (£825—£1,000 per annum).
ARCHITECTURAL ASSISTANTS, Grade A.P.T., IV-V (£675—£900 per annum).
ARCHITECTURAL ASSISTANTS, Grade A.P.T., II-III (£560—£725 per annum).
The appointments will be subject to the provisions of the Local Goverment Superannuation Acts, and the successful candidates will be required to pass a medical examination.
An allowance of 30s. per week will be paid for a period not exceeding six months in the event of a married man being appointed who is unable to find accommodation.
Applications, stating age, qualifications, experience, present position and salary, together with the names of two referees, should be delivered to S. M. Holloway, A.R.I.B.A., County Architect, County Buildings, Huntingdon, in a sealed envelope appropriately endorsed, by Friday, 30th September, 1955.
A. C. AYLWARD,
Clerk of the County Council.
County Buildings, Huntingdon.
16th September, 1955. 2835

COUNTY OF ESSEX.
ILFORD COMMITTEE FOR EDUCATION.
The Essex County Council invite applications for an ASSISTANT ARCHITECT, to work in the Office of the Borough Engineer of Ilford.
Applicants should be Members of the Royal Institute of British Architects, and have had considerable experience in the planning, designing, construction and supervision of school buildings, and have had administrative experience.
The scale of salary will be in accordance with the National Joint Council A.P.T. Division, Grades IV-VI (£675—£1,000), plus the appropriate London area allowance. There will also be paid such travelling and subsistence allowances as may from time to time be determined by the Council. The post is superannuable and subject to medical examination.
Application should be made on a form to be obtained from, and returned to, the Borough Education Officer, Education Offices, Town Hall, Ilford, together with copies of not more than three recent testimonials, within 14 days of the appearance of this advertisement. 2858

BOROUGH OF SCUNTHORPE.
BOROUGH SURVEYOR'S DEPARTMENT.
Applications are invited for the appointment of ASSISTANT ARCHITECTS in Grade A.P.T., II (£560 p.a.×£20—£640 p.a.), and the Special Grade (£650 p.a.×£25—£775 p.a.). The work will include housing, shops, and other Municipal works.
Housing accommodation will be provided if necessary.
Applications, giving details of experience and qualifications, and indicating which post is being applied for, should be received by the undersigned by Monday, 3rd October, 1955.
Canvassing will disqualify. Applicants must state whether they are related to any member or senior officer of the Council.
W. P. ERRINGTON,
Town Clerk.
Municipal Offices, 34, High Street, Scunthorpe.
9th September, 1955. 2839

CITY AND COUNTY OF BRISTOL.
CITY ARCHITECT'S DEPARTMENT.
Applications invited from Architects for undermentioned permanent Staff appointments:—
(*a*) SECTION HEAD, Grade B (£1,150×£52 10s.—£1,307 10s.), and car allowance.
(*b*) DEPUTY SECTION HEAD, Grade A (£1,063 15s.×£40 (3)×£45—£1,228 15s.).
Candidates for (*a*) must be Associates of R.I.B.A., with considerable practical experience in local authority housing work. Duties of post will include attendance at Committees, preparing reports, design and construction of housing accommodation and ancillary buildings, and control of senior and junior architectural staff engaged upon such work.
Candidates for (*b*) must be Associates of R.I.B.A., with considerable practical experience in the planning of buildings of the type normally required by a Local Authority and control of senior and junior architectural staff. Housing accommodation available, if necessary, at an economic rent.
Appointments are superannuable, subject to satisfactory medical examination and to one month's notice in writing on either side. Further particulars and application forms obtainable from me. Applicants must state post for which they are applying. Completed application forms to be received by 1st October.
J. NELSON MEREDITH, F.R.I.B.A., City Architect, Council House, College Green, Bristol, 1. 2859

MIDDLESBROUGH EDUCATION COMMITTEE.
APPOINTMENT OF ARCHITECTURAL STAFF.
Applications are invited from suitably qualified persons for the following vacancies in the office of the Education Architect (K. J. Caton, A.R.I.B.A.).
Appointments will be made within the grades as indicated, subject to qualifications and experience.
(*a*) ONE SENIOR ASSISTANT ARCHITECT, A.P.T., Grade V (£750—£900).
(*b*) ASSISTANT ARCHITECTS, Special Grade (£650—£775).
(*c*) ONE ARCHITECTURAL ASSISTANT, A.P.T., Grade II (£560—£640)
HOUSING ACCOMMODATION is available for the successful applicants for posts (*a*) and (*b*) if required.
Application forms and particulars may be obtained from the Director of Education, Education Offices, Woodlands Road, Middlesbrough, to whom completed forms should be returned not later than 6th October, 1955. 2908

NOTTINGHAMSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF STAFF.
Applications are invited for the following staff:—
(1) ASSISTANT ARCHITECTS.
Grade A.P.T., IV. Salary £675×£30—£825 p.a.
Applicants must be fully qualified and registered Architects.
(2) STRUCTURAL ENGINEER.
Grade A.P.T., V. Salary £750×£30—£900 p.a.
Applicants should be Associate Members of the Institute of Structural Engineers, and must be capable of undertaking the design and supervision of the erection of all types of structures.
Forms of application may be obtained from Donald Gibson, County Architect, County Hall, Trent Bridge, Nottingham, to whom they should be returned as soon as possible and in any event not later than 14th October, 1955.
A. R. DAVIS,
Clerk of the County Council.
Shire Hall, Nottingham. 2904

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
Vacancies for ARCHITECTS, Grade III (up to £945), and ARCHITECTURAL ASSISTANTS (up to £783), for widespread construction programme, which includes houses, blocks of flats, schools of all types, and various public and industrial buildings. Application forms and particulars from Architect (AR/EK/A/2), The County Hall, S.E.1. (1189) 2766

KENT COUNTY COUNCIL require ASSISTANT ARCHITECTS at salaries (*a*) £675—£825, and (*b*) £650—£775. Candidates for (*a*) must be Associate Members of the Royal Institute of British Architects and for (*b*) must have passed Parts 1 and 2 of the Final Examination of the Institute. Application forms from the County Architect, Springfield, Maidstone. Closing date 29th September, 1955. 2812

COLLEGE OF TECHNOLOGY, BIRMINGHAM.
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING.

Applications are invited for appointment as full-time LECTURER IN STRUCTURAL ENGINEERING and associated subjects.

Candidates should hold one or other of the following qualifications:—

(*a*) B.Sc.(Eng.), with structural engineering subjects.
(*b*) A.M.I.Struct.E.
(*c*) A.M.I.C.E.

Industrial experience is essential, and ability to teach structural engineering with an architectural bias will be advantageous.

The successful candidate will be required to take up the appointment as soon as possible.

Salary will be in accordance with the Burnham (Further Education) Scale for Lecturers (Men), £965×£25 to £1,065.

Further particulars and form of application may be obtained from the Registrar, College of Technology, Suffolk Street, Birmingham, 1, on receipt of a stamped addressed foolscap envelope. Completed forms should be returned to him not later than two weeks after the appearance of this advertisement.

K. R. PILLING,
Clerk to the Governing Body.
2903

LIVERPOOL REGIONAL HOSPITAL BOARD.

Applications invited for the following appointments in the department of the Regional Architect:—

ASSISTANT ARCHITECTS.
Salary scale: £640×£25 (4)×£30 (4)×£35 (2) to £930 p.a.

ARCHITECTURAL ASSISTANTS.
Salary scale: £480 (at age 21 or over)×£20 (7)×£25 (2) to £670 p.a.

DRAUGHTSMEN.
Salary scale: £390 at age 21 or over (less £20 for each year below that age)×£20 (2)×£25 (6) to £580 p.a.

JUNIOR ASSISTANT.
Salary scale (Male): £170 at age 15 years, and by increments according to age to a maximum of £400 at age 25 years. (Female): £165 at age 15 years, and by increments according to age to a maximum of £330 at age 25 years.

The starting salary in each case dependent on age and experience.

The appointments will be either to established posts or to temporary posts in connection with a large project now proceeding. In the latter case the appointments will be terminable by three months' notice on either side.

Applications, stating age, experience, qualifications, present and past appointments, and salary names and addresses of three referees (two technical), to me by 30th September, 1955.

VINCENT COLLINGE.
Secretary to the Board.
19, James Street, Liverpool, 2. 2902

KUMASI COLLEGE OF TECHNOLOGY.
(*Principal*: W. E. DUNCANSON, Ph.D., D.Sc., F.Inst.P., A.M.I.E.E.)

Applications are invited for the following posts:—

SENIOR ARCHITECT,
TWO ARCHITECTS,

to design and supervise erection of College buildings. Candidates must be Members of R.I.B.A. The appointments will be on contract for a minimum period of two tours of 12-18 months each.

Salary scales (including contract addition): Senior Architect, £2,000—£2,500 p.a.; Architects, £1,030—£2,020 p.a., plus gratuity of £37 10s. for each three months' satisfactory service. Initial salary according to experience. Houses with basic furniture provided at moderate rental. Free first class passages to and from Gold Coast, once each way for each tour of service, for persons appointed, wives and up to three children under 17. Generous home leave on full salary after each tour.

Further information may be obtained from Secretary, Advisory Committee on Colonial Colleges, 1, Gordon Square, London, W.C.1, to whom applications (6 copies), giving details of education, qualifications and experience, and naming three referees, should be sent by 31st October, 1955. 2896

MIDLANDS ELECTRICITY BOARD.

SENIOR DRAUGHTSMAN required at the North Staffordshire Sub-Area Headquarters. Applicants should have had a thorough technical training and practical experience in the preparation and design of building construction drawings. Possession of a recognised qualification an advantage. Salary £640—£740 per annum (N.J.B. Schedule "D." Grade 5). Superannuable.

Apply in writing, within 14 days, stating age, education, qualifications, experience, present position and salary, to Sub-Area Manager, Midlands Electricity Board, 31, Kingsway, Stoke-on-Trent.

A. STEPHENS, *Secretary.*
2879

METROPOLITAN BOROUGH OF BATTERSEA.
ARCHITECTURAL DRAUGHTSMAN.

Applications are invited for the appointment of ARCHITECTURAL DRAUGHTSMAN. Salary £500—£580, plus London weighting (A.P.T., D. L.G. Supn. Act. Application forms from Borough Engineer, Town Hall, Battersea, S.W.11. Closing date: 3rd October. 2840

Architectural Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

ASSISTANT required in busy practice in West End, in early twenties, about Intermediate R.I.B.A. standard. Excellent opportunities for gaining all round experience. Box 1942.

RAMSEY, MURRAY & WHITE have a vacancy for ARCHITECTURAL ASSISTANT, about Intermediate standard, preferably with office experience. Salary according to qualifications. Apply 32, Wigmore Street, London, W.1, or telephone WELbeck 1409. 9823

WESTWOOD, SONS & HARRISON, F./F.R.I.B.A., urgently require a SENIOR ARCHITECTURAL ASSISTANT, A.R.I.B.A. standard, with office experience; also JUNIOR ASSISTANT. Apply in writing, giving qualifications, to 46, Baker Street, W.1. 1958

ARCHITECTURAL ASSISTANT required by Major Oil Company undergoing expansion, for its Sheffield office. Applicants should be of Intermediate standard, and must be capable of carrying out work on the design and re-modelling of service stations. Social Club, Pension and Life Assurance scheme, generous sickness benefits. Write, giving full details of experience, age and salary required, to Box 9262, quoting Ref. A.A. 588.

RONALD WARD & PARTNERS require several capable ARCHITECTURAL ASSISTANTS, with contemporary outlook and willing to use own initiative. Salary range £400 to £800. Interesting and varied work, home and abroad. Congenial working conditions. Apply 29, Chesham Place, Belgrave Square, S.W.1. Telephone: Belgravia 3361. 2135

ARCHITECTURAL ASSISTANTS (2) required in City Office with a wide and comprehensive range of commissions. Salary range £559—£832. Seely & Paget, Central 0321. 2256

ARCHITECTURAL ASSISTANTS interested in the field of Building for Atomic Energy could be employed by private consultants in London and should apply to Box 235, Glovers Advertising, 351, Oxford Street, London, W.1. 2453

SENIOR ASSISTANT required in Architect's Department of large London Industrial concern. Knowledge of London Building Acts and By-Laws an advantage. Good prospects; Pension scheme. State age, experience and salary required. Reply Box No. 2699.

ARCHITECTURAL ASSISTANTS required, all grades, for contemporary office. Salary according to experience. C. H. Elsom, F.R.I.B.A., 44, Catherine Place, S.W.1. Victoria 4304. 3695

JUNIOR ASSISTANT, competent to make measured surveys and prepare working drawings, required by Wallis & Smith, Chartered Architects, Basingstoke. Apply by letter, stating salary required. 2533

ARCHITECTURAL ASSISTANTS, Senior and Junior required, preferably with London practice experience, office and factory buildings. Write, giving particulars of experience, etc., to Messrs. Bates & Sinning, 89, Chancery Lane, W.C.2. 2508

ARCHITECTURAL ASSISTANTS urgently required. Salary range £500—£850, for work on industrial projects in new town in Hertfordshire, on main line from London. Congenial office atmosphere, work of contemporary character. Good prospects for successful applicants. Assistance will be given in obtaining accommodation. Box 2705.

J. DOUGLASS MATHEWS & PARTNERS, Chartered Architects, 3, Ebury Street, London, S.W.1, require SENIOR and JUNIOR QUALIFIED ASSISTANTS. Seniors capable of leading design teams. Salaries in accordance with experience. 2646

ARCHITECTURAL ASSISTANTS, with ability and experience in houses and flats, competent draughtsman, capable of detailing, required. 5-day week. Permanent for suitable applicant. Write, stating experience and salary required, to R. Jelinek-Karl, F.R.I.B.A., 22, Chancery Lane, W.C.2. 2763

ARCHITECTURAL ASSISTANTS are invited to apply for vacancies which exist in the London Head Office of a leading Building Organisation. Initial salary in region of £750 per annum. Applicants should have Final R.I.B.A.

Young ARCHITECTS with Intermediate R.I.B.A. are also required. Commencing salary in region of £600 per annum. Write quoting reference A.A.A. and stating full details to Box 2760.

MESSRS. CLIFFORD CULPIN & PARTNER require TWO ASSISTANTS at approx £650—£750 p.a., also TWO JUNIORS at approx. £500. Interesting and varied work, including Civic and office buildings, schools, multi-storey flats, etc. Write 3, Southampton Place, W.C.1. 2776

IMPERIAL CHEMICAL INDUSTRIES, LTD., Metals Division, has a vacancy for an ARCHITECTURAL ASSISTANT for design and detail work connected with the development of Industrial Buildings. Applicants should be of Intermediate standard and Civil Engineering experience would be an advantage. Application forms may be obtained from the Staff Manager, I.C.I. Metals Division, Kynoch Works, Witton, Birmingham, 6, quoting ARC/2. 2747

SIR JOHN BURNET, TAIT & PARTNERS have vacancies for SENIOR and JUNIOR ASSISTANTS. Write, giving particulars, to 10, Bedford Square, W.C.1. 2777

LONDON office requires experienced ARCHITECTS for supervisory duties. Posts available at £1,000 and £1,400 per annum. Car facilities or expenses will be paid, and the successful applicants will be required to control large contracts. All applications will be dealt with in absolute confidence, and the applicants should reply with full particulars of their training and experience, and should state for which post they are applying. Box 2779.

ARCHITECTURAL ASSISTANT, Intermediate standard, required. Apply, giving particulars of age, experience, and salary required, to J. W. Cameron & Co., Ltd., Lion Brewery, West Hartlepool. 2782

WATES, LTD., offer permanent and progressive posts for ASSISTANTS in their Architects Department. The company has an interesting programme of housing work of all kinds, and of commercial buildings, and applicants should preferably have some experience in these fields. Five-day week, pension scheme, good salaries according to ability.—Write, stating age, education, qualifications and experience to the Architect, Wates Ltd., 1258-60 London Rd., Norbury, S.W.16. 2800

EAST MIDLANDS.—SENIOR ASSISTANT required in small progressive office for varied work, including Schools. Excellent opportunity for experience and initiative. Car driver preferred. Box 2719.

GRANADA THEATRES require permanent services of young ARCHITECTS, recently qualified. Good opportunities in interesting work exist for those with drive, imagination, and initiative. Applications, stating age, qualifications, experience and salary required, to Managing Director, Granada Theatres, Ltd., 36, Golden Square, London, W.1. 2712

SENIOR ARCHITECTURAL ASSISTANT required for expanding contemporary practice, must be qualified. C. H. Elsom, F.R.I.B.A., 44, Catherine Place, S.W.1 VICtoria 4304. 2621

LEWELLYN SMITH & WATERS invite applications from (*a*) QUALIFIED ARCHITECTS to take charge of large industrial projects. Experience of job management and knowledge of present-day constructional forms is essential. (*b*) QUALIFIED and UNQUALIFIED SENIOR and JUNIOR ASSISTANTS to work on these and other projects. (*c*) In Worcester Office, ASSISTANT of R.I.B.A. Inter. Standard with three years' office experience. Preferably with experience of job supervision and specifications. Salary according to experience and ability. Write 103, Old Brompton Road, S.W.7. 2623

VACANCIES exist for LEADING ASSISTANT ARCHITECTS on British Railways at York. Applicants must be Chartered Architects and have ability in architectural design, knowledge of modern building technique and have had some experience of the control of a small staff. Salary range £950/£1,000.

A vacancy also exists for an ASSISTANT ARCHITECT who should be a qualified Architect, or if not, have had several years' experience. Responsible for sketches and working drawings under supervision for smaller jobs. Salary range £720/£780.

Applications in writing, giving age, experience, qualifications, etc., to the Chief Civil Engineer, British Railways, North Eastern Region, York. 2625

ARCHITECTURAL ASSISTANT required; Intermediate Standard or above, an interesting variety of work. Some office experience essential. Salary according to age, experience, etc.: George Watt, A.R.I.B.A., 146, Mostyn Road, S.W.19. Liberty 8181. 2658

ARCHITECTURAL ASSISTANT required up to Intermediate R.I.B.A. Standard, for Housing and Estate work in West End Office. Salary £300 to £400 p.a., according to qualifications and experience, with prospects for advancement. Apply Percy Bilton Ltd., 113, Park Street, W.1, or Tele: May 8240. 2654

CECIL Howitt & Partners, Architects, St. Andrew's House, Mansfield Road, Nottingham, require JUNIOR ARCHITECTURAL ASSISTANTS, preferably Inter. R.I.B.A. standard. Please apply in writing, giving full details and stating salary required. 4705

SMALL Westminster off. Opportunity for pre-Final ASSISTANTS to take charge of jobs in office and on site, gaining all round experience. Commencing salary, £600 p.a. Apply Geoffrey Shires. Telephone Abbey 4909. 2694

ARCHITECTURAL ASSISTANTS wanted in general London practice. Intermediate standard or above. Please apply with details of experience, age and salary required to David A. Wilkie & Partners, 45, Chancery Lane, W.C.2. CHAncery 6460. 2676

STRUCTURAL DESIGNER; ARCHITECTURAL ASSISTANTS; GENERAL CIVIL ENGINEERING ASSISTANTS; DRAUGHTSMEN (including Structural, Heating and Ventilation, etc.). THE Steel Company of Wales Limited (Steel Division) invite applications for the above vacancies in their central Drawing Offices at Abbey Works, Port Talbot.

Applicants should have sound experience of Drawing Office work and for the senior jobs should possess previous supervisory experience.

The positions are permanent and pensionable and carry attractive rates and conditions. Splendid opportunities for promotion within an expanding industry.

Those wishing to apply, should write for official Application Form (stating which vacancy is being applied for) to :—

Personnel Superintendent, The Steel Company of Wales Limited (Steel Division), Abbey Works, PORT TALBOT, Glam. 2655

THE London Hospital, Whitechapel, E.1, requires JUNIOR ARCHITECTURAL ASSISTANT. Salary £440 to £650 p.a. according to experience, plus London weighting. Post superannuable. Applications stating age, present salary and brief particulars of experience to be sent to the House Governor. Accommodation is available in Kensington if successful candidate is a woman. 2677

MIDLAND firm of Architects require young, qualified architect as principal ASSISTANT to partner. Some experience. Attractive salary for right man. Box 2822.

SENIOR ASSISTANT required by Glasgow Architect. Salary £900—£1,000. Please state qualifications and previous experience. Box 2910.

LONDON Building Firm offers a young practical minded ARCHITECT, thorough site training in work study technique and costing. The appointment would lead to an appreciation of the elements of sound economic design and perhaps an opportunity to apply that knowledge in the design and pre-planning of building projects. Apply Box No. 2688, c/o Whites, 72/8, Fleet St., London, E.C.4. 2819

ARCHITECTURAL ASSISTANT required in busy London Office with varied practice. Good salary and prospects for suitable applicant. 5-day week. Write giving particulars of age, qualifications, experience, etc., to Box 736, c/o 7, Coptic St., W.C.1. 2826

ARCHITECTURAL ASSISTANT, R.I.B.A., of Intermediate standard, required for a period of 3-4 months to assist architect in the preparation of working drawings for an Office Block and Canteen, London Area. Salary up to £500 per annum. Reply stating age and experience to Box 2831.

NORMAN AND DAWBARN require ARCHITECTURAL ASSISTANTS at or above R.I.B.A. Intermediate standard with not less than 3 years' continuous office experience. Salaries will be according to age, also length and type of experience, but within the approximate range £500—£800. An interesting and varied programme of work is available. Applications stating age and details of career should be made in writing to 5, Gower Street, London, W.C.1. 2832

CO-OPERATIVE WHOLESALE SOCIETY LTD., ARCHITECT'S DEPARTMENT, LONDON.

ASSISTANT ARCHITECTS, WORKER-UP, AND SHOP FITTING DRAUGHTSMAN. Applications are invited from suitably qualified persons. Salary on a scale £485—£945 inclusive of L.W., with placing according to age, qualifications and experience. The posts are superannuable, subject to medical examination. Five-day week in operation. Applications stating age, experience, qualifications and salary required to.—W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 99, Leman Street, London, E.1. 2824

RHODESIA : Established firm of Chartered Architects require two ASSISTANTS with several years' good experience. One for SALISBURY and other for NDOLA. Single men preferred, salaries from £700 p.a. on three-year contracts with small and increasing bonus each year. Further details, quoting OSS.22/5, from Overseas Technical Service, 5, Welldon Crescent, Harrow. 2838

ARCHITECTURAL ASSISTANT, intermediate standard, required for busy office near Nottingham, with interesting and varied practice. Salary according to experience. Apply Box 2846.

CO-OPERATIVE WHOLESALE SOCIETY LTD., ARCHITECT'S DEPARTMENT, BIRMINGHAM.

APPLICATIONS are invited for the following appointments in a newly formed Branch Office. Interesting and varied commercial and industrial projects.

(A) SENIOR ASSISTANT ARCHITECT with experience in store and shop design.

(B) ASSISTANT ARCHITECTS capable of preparing working drawings and details from preliminary sketches.

Applications stating age, experience, qualifications and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester, 4. 2862

N.C.B.—Applications are invited for the following permanent and superannuated appointments at Headquarters in Edinburgh. ARCHITECTS Grade I—Salary £900 × £35—£1,200, applicants must be Associate Members of the R.I.B.A. and have had considerable experience in the control of staff and handling of large scale Contracts. ARCHITECTS Grade II—Salary £600 × £25—£650 × £30—£900. Qualifications required : A.R.I.B.A. ARCHITECTURAL ASSISTANTS Grade I—Salary £525 × £25—£650 (exceptionally to £800). Qualifications required : Inter. R.I.B.A. with not less than three years' subsequent practical experience. ARCHITECTURAL ASSISTANTS Grade II—Salary £440 × £20—£540. The point of entry to the salary scales (which are at present under review) will depend on the ability and experience of the successful applicant. In exceptional circumstances those applicants who have not passed the Intermediate Examination of the R.I.B.A., but have considerable practical experience will be considered for the posts of Architectural Assistant, Grade I or Grade II. The National Coal Board, Scottish Divisional, is engaged on a development programme which includes complete new collieries and Area Headquarters, embracing two- and three-storey Office Blocks, multi-storey composite buildings of framed construction, laboratories, large workshops, stores, pithead baths, canteens, medical centres, winding towers and other new and unorthodox architectural compositions. The work offers scope to Architects alive to contemporary design problems. Where required, every help will be given in finding suitable accommodation. Applications, giving full details of age, education, qualifications, experience (in chronological order), present post and salary, should be forwarded to Establishments Officer, National Coal Board, 1, Eglinton Crescent, Edinburgh, 12, within 7 days. 2860

JUNIOR ASSISTANT required to assist Staff Architect of furnishing combine. The company has branches throughout Great Britain but the H.Q. is in London. The successful applicant will be given the opportunity of running small contracts and must be prepared to work on own initiative. Occasional travelling will be involved. Contributory superannuation scheme. Write giving full details in strict confidence to Box 2866.

W. H. WATKINS, GRAY, FF.R.I.B.A., & PARTNERS, require experienced ASSISTANTS for interesting hospital work. Pension scheme in operation. Reply giving full particulars and salary required to 57, Catherine Place, London, S.W.1. 2875

ASSISTANTS of Intermediate Standard (or thereabouts) required in busy office with varied work. Work is of interesting nature with contemporary outlook. More than adequate salary is offered. Apply to C. J. Epril & Associates, 55, Pall Mall, London, S.W.1. Telephone Whitehall 1182. 2874

ORMAN AND PARTNERS, Chartered Architects, require two ARCHITECTURAL ASSISTANTS of Intermediate to Final R.I.B.A. Standard for their Guildford office. Salaries related to experience. Apply stating age and previous experience ; 23A High Street, Guildford, Surrey. Telephone 67688/9. 2878

CO-OPERATIVE WHOLESALE SOCIETY LTD., ARCHITECT'S DEPARTMENT, MANCHESTER.

APPLICATIONS are invited for the following appointments :—

(A) SENIOR ASSISTANT ARCHITECTS with experience of work in commercial and industrial projects.

(B) ASSISTANT ARCHITECTS capable of preparing working drawings from preliminary details.

Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester, 4. 2861

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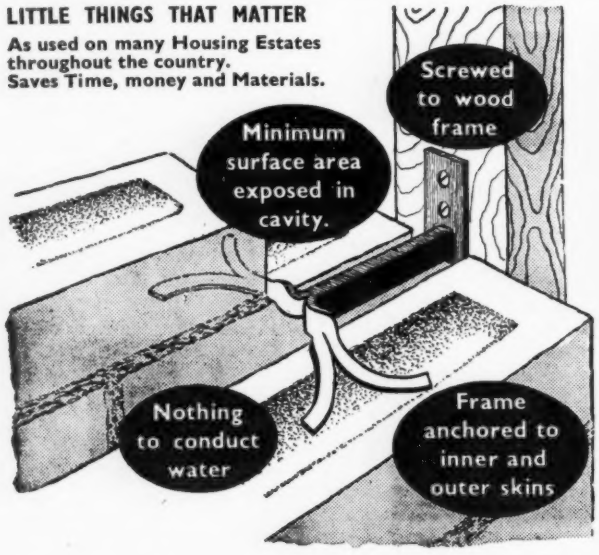
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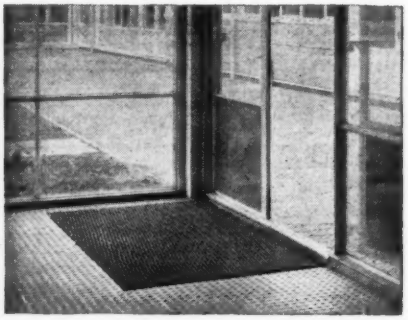
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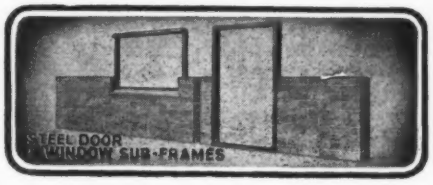
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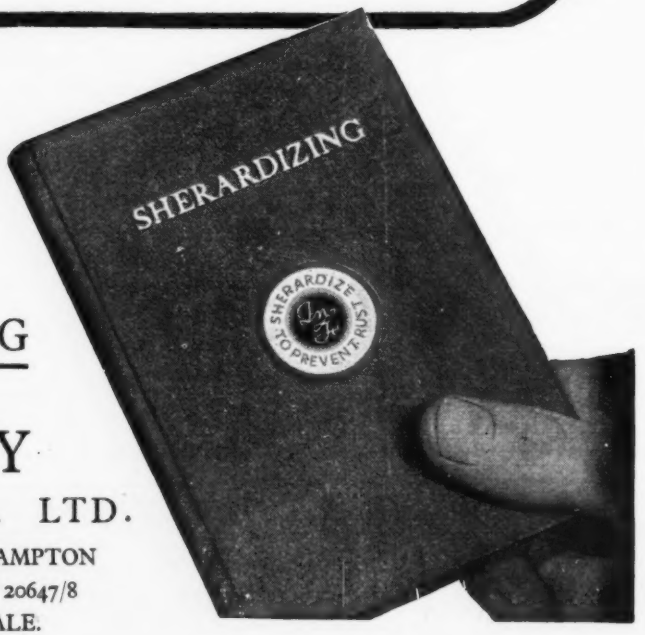


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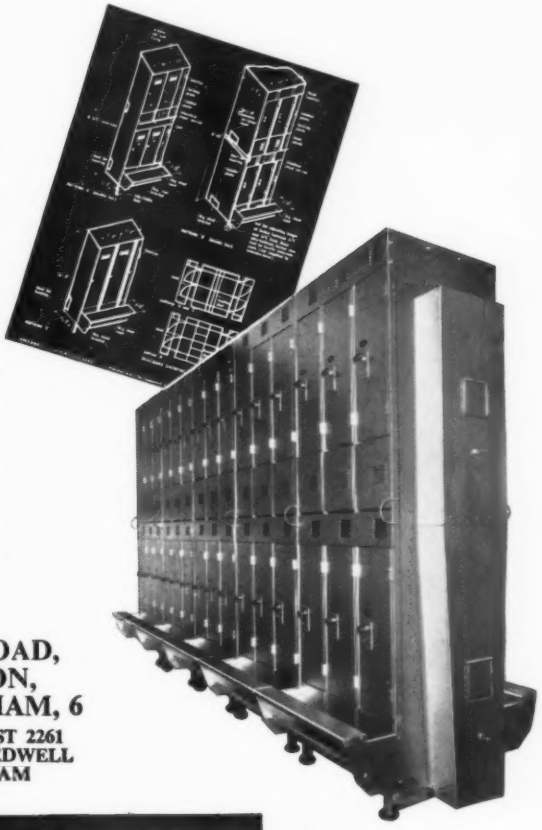
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